AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—Washington.

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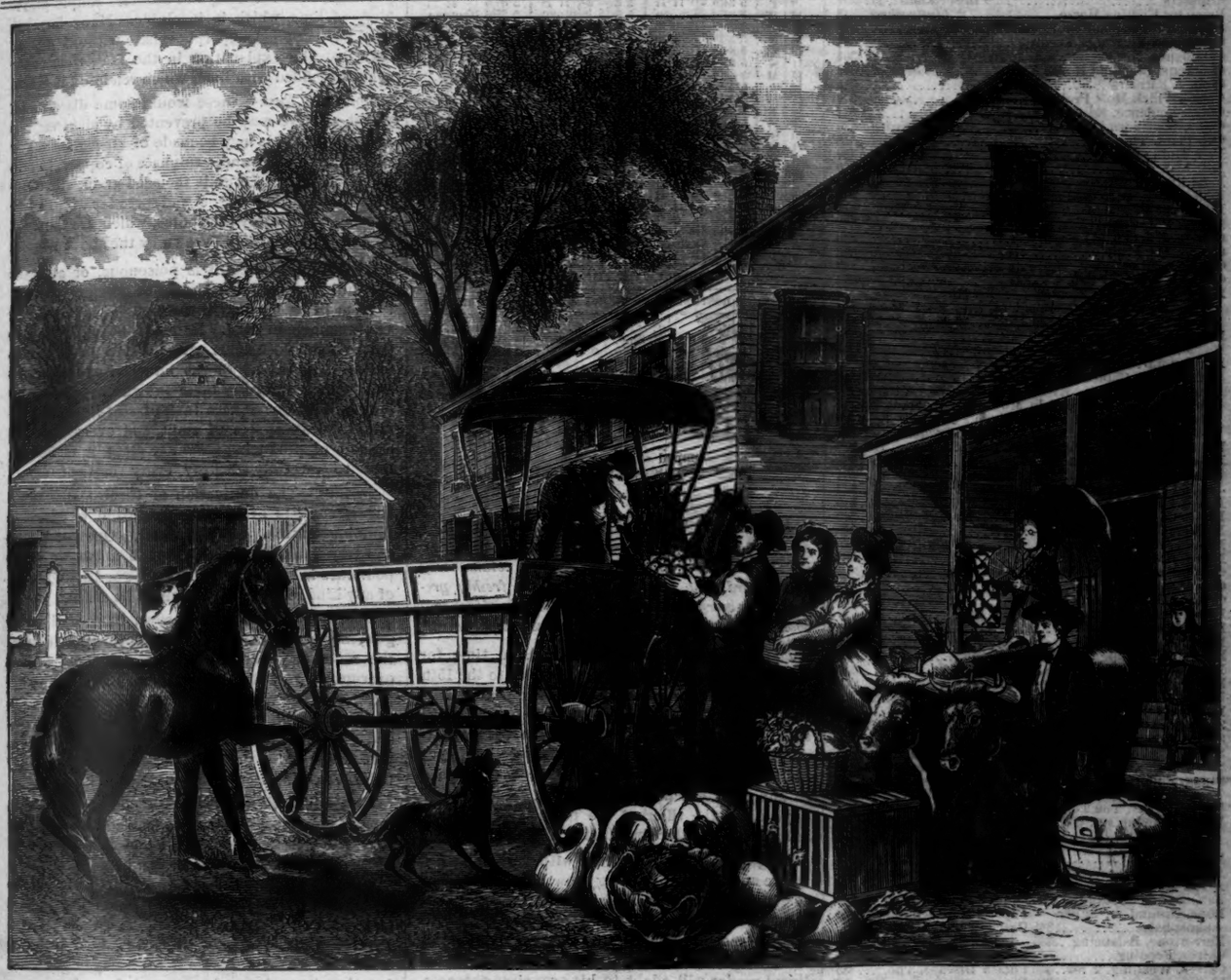

STARTING FOR THE FAIR.—Drawn by W. M. Cary.—*Engraved for the American Agriculturist.*

It has come at last—the day for which the whole family have been looking, working, and preparing—the day of the Fair, and now on this bright September morning, when the air is filled with the odors of ripeness, and the whole country smiles with a bounteous harvest, this good farmer's family are about starting for the Fair. It is the end of many days of careful thought and anxious preparation. Charlie is afraid that the colt may be just too frisky, and forgetting the care given to the last grooming, may rumple a hair or two; George is in doubt whether his young steers may not forget the many hours of careful training, and in the confusion of sights and sounds at the fair, fail to do as well as they have already done in the yard this morning; each of these has all he can do to care for his pets, and the loading up falls to the father and others. The potatoes, the turnips, the apples, the squashes, the pumpkins, and the chickens, must all be carefully stowed away. The bread, which the mother was up long-before daylight to bake, must have a safe place, and the bouquet to which the older daughter has given all the best flowers of her garden—that must be carried by hand. But there is the quilt—grandmother feels too old to enjoy the Fair, besides some one must be left at home "to look after things"—but she has made a quilt—one of those marvels in patch-work without which no well-regulated Fair can be complete. So make a place for the quilt in the load—for precious loving thoughts have been worked in with the stitches—and one of the best places too at the Fair, for grandmother will not make quilts for many more fairs. The family have not started, yet what a world of good has its preparation brought! Did not the father learn that in raising ruta-bagas and mangels fit to show, he must give each root a plenty of room? Has not the older son, to beat his neighbor on apples, thinned that Baldwin tree at least three times during the season? The son with the colt and the other with the young steers, what an amount of self control they have learned in trying to control their animals, and the mother, the daughters, and all have in their work of preparation, already had much interesting occupation—and the enjoyment of the Fair is still to come. We hope that this picture may serve as a representation of what will take place in many and many a farmers' family this month and next, throughout our broad country. The isolation of the family is the great misfortune of our farm life. The house is placed as near as may be in the center of our large farms, and neighborly intercourse is difficult. Hence it is all the more necessary for the farmer and his family to make the best of the opportunity for social enjoyment afforded by the local fair. If the fair did only this, it would be worthy of encouragement; but it does much besides. These good people will go to the Fair, see much, meet many old friends, learn much, and, let us hope bring away pleasant recollections—and some premiums. But what they will take is far better than any premiums they will bring away—for they take their best—they show that they have a pride in the farmers' life, and they show the best products of that life—not in the crops, the steers, the colt and chickens, the bread or quilt; but in the very best of all products of the farm, the men and women, and the boys and girls, who will soon be men and women. These are the best products of American farms, and they are such products as the farms of no other country can show.

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Calendar for September, 1879.

Day of Month.	Day of Week.	*Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon.* Sun rises.	Sun sets.	Moon rises.	*N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois.* Sun rises.	Sun sets.	Moon rises.	*Washington, Maryland, Virginia, Kentucky, Missouri, and California.* Sun rises.	Sun sets.	Moon rises.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	M	5 25	6 35	6 40	5 27	6 33	6 41	5 29	6 31	6 41
2	T	5 26	6 33	7 2	5 28	6 31	7 3	5 30	6 29	7 5
3	W	5 27	6 31	7 27	5 29	6 30	7 29	5 31	6 28	7 30
4	T	5 28	6 30	7 49	5 30	6 28	7 53	5 32	6 26	7 57
5	F	5 29	6 28	8 17	5 31	6 26	8 23	5 33	6 25	8 28
6	S	5 30	6 26	8 50	5 32	6 25	8 56	5 33	6 23	9 2
7	S	5 31	6 24	9 29	5 33	6 23	9 36	5 34	6 21	9 43
8	M	5 33	6 23	10 16	5 34	6 21	10 23	5 35	6 20	10 31
9	T	5 34	6 21	11 11	5 35	6 20	11 18	5 36	6 18	11 25
10	W	5 35	6 19	morn	5 36	6 18	morn	5 37	6 16	morn
11	T	5 36	6 17	0 13	5 37	6 16	0 19	5 38	6 15	0 25
12	F	5 37	6 16	1 20	5 38	6 15	1 25	5 39	6 13	1 29
13	S	5 38	6 14	2 29	5 39	6 13	2 33	5 40	6 11	2 37
14	S	5 39	6 12	3 41	5 40	6 11	3 44	5 41	6 10	3 46
15	M	5 40	6 10	sets	5 41	6 10	sets	5 42	6 8	sets
16	T	5 41	6 8	6 0	5 42	6 8	6 2	5 43	6 6	6 4
17	W	5 42	6 7	6 29	5 43	6 6	6 31	5 44	6 4	6 35
18	T	5 43	6 5	7 0	5 44	6 4	7 5	5 45	6 3	7 10
19	F	5 44	6 3	7 38	5 45	6 3	7 44	5 46	6 1	7 50
20	S	5 45	6 1	8 24	5 46	6 1	8 31	5 47	5 59	8 33
21	S	5 46	6 0	9 20	5 47	5 59	9 27	5 48	5 58	9 35
22	M	5 47	5 58	10 24	5 48	5 58	10 31	5 49	5 56	10 34
23	T	5 49	5 56	11 33	5 49	5 56	11 39	5 50	5 54	11 43
24	W	5 50	5 54	morn	5 50	5 54	morn	5 51	5 53	morn
25	T	5 51	5 53	0 44	5 51	5 53	0 49	5 51	5 51	0 53
26	F	5 52	5 51	1 53	5 52	5 51	1 57	5 52	5 50	2 1
27	S	5 53	5 49	3 1	5 53	5 49	3 3	5 53	5 48	3 6
28	S	5 54	5 47	4 6	5 54	5 48	4 7	5 54	5 46	4 8
29	M	5 55	5 45	rises	5 55	5 46	rises	5 55	5 45	rises
30	T	5 56	5 44	5 28	5 56	5 44	5 31	5 55	5 44	5 33

PHASES OF THE MOON.

MOON.	BOSTON.	N. YORK.	WASH'N.	CHA'STON	CHICAGO.
	D. H. M.	H. M.	H. M.	H. M.	H. M.
3d Quart.	8 3 20 ev.	3 8 ev.	2 56 ev.	2 44 ev.	2 14 ev.
New M'n	16 1 13 mo.	1 1 mo.	0 49 mo	0 37 mo.	0 7 mo.
1st Quart	23 4 36 ev.	4 24 ev.	4 12 ev.	4 0 ev.	3 30 ev.
Full M'n	30 4 33 mo.	4 21 mo.	4 9 mo	3 57 mo.	3 27 mo.

AMERICAN AGRICULTURIST.

NEW YORK, SEPTEMBER, 1879.

Hints for the Work of the Month.

[*The Hints and Suggestions in these columns are never copied from previous years, but are freshly prepared for every month, from the latest experience and observations, by practical men in each department.*]

Full Grain.—This month is the usual time for sowing wheat and rye. From the 10th to the 15th is the most popular time, but it is a question if it is not better to sow earlier. On any but very rich soils, it takes some time for the crop to get thoroughly well rooted and tillered, and if tillering is not effected before winter, it will rarely take place to any great extent in the spring. As the yield depends on the tillering, the promise of an early sown crop, is better than that of a late one.

Exceptions to this Rule occur with very rich soils, where an excessively strong growth may be looked for, and the attacks of the Hessian fly must be considered. These hints, it is obvious, cannot be made to meet every case in a wide range of localities; we give general information, which the intelligent reader will adapt to his own circumstances.

Late Sowing for Spring Fodder.—It has been usual to sow rye as late as October or November, for green-fodder in the spring. This is not a profitable practice. The rye comes up very thin and poor, and makes but a light crop. In the writer's experience, it has been found better to plow the ground in the fall, top-dress it through the winter with fine manure, and as early in the spring as possible, harrow in 4 bushels per acre of spring rye, spreading the manure at the same time with the disk harrow. Unless there is some good reason for the late sowing of rye, it should be avoided.

Fertilizer for Wheat.—Every year's experience proves the value of superphosphate of lime, as a special fertilizer for wheat. An experienced wheat grower informs us, that he has used 500 lbs. to the acre, and that the crop this year, has paid handsomely for the outlay. Where a smaller quantity was used, the yield was unsatisfactory.

A Frequent Mistake is made in supposing that if a certain quantity of fertilizer will have a certain effect, this effect will be doubled by doubling the quantity of the fertilizer. This has led to much waste and loss. The greatest possible effect is produced with a certain quantity, varying according to circumstances; and each one must discover for himself, what this quantity is. In the case above quoted, 500 lbs. per acre is the most useful quantity. Others have found it best to use 600 lbs. and others again, use only 300 lbs. As a rule, the largest applications may be most safely made on soils well filled with barn-yard manure, or vegetable matter.

The Use of Lime.—An application of lime will be found useful upon any kind of soil, at least once in five or six years. It is generally used at this season, with a fall grain crop. But where lime is employed, it will be useless to apply superphosphate, as this combines with the lime, and becomes simple phosphate of lime, which is insoluble. Many farmers who have applied superphosphate without effect, may find the explanation in the fact, that their soils were filled with lime, which rendered it inert.

Smut and Rust.—These troublesome diseases of wheat and rye may be prevented by pickling the seed. The pickle may be made of strong brine, or of a solution of 4 ounces sulphate of copper, in one gallon of water. Sprinkle the seed grain, stir thoroughly to wet every kernel, and spread to dry. Either of these will destroy the spores, which are the seed of the parasitic fungi, known by the above names.

Smut in Corn.—Smut is poisonous, or at least very injurious, and care should be taken to prevent it from being eaten with fodder. It is becoming very common in corn. It might be well to pass through the corn-fields with a sharp knife and a basket, and cut off all the bunches of smut and smutty ears, and carry them out where they may be burned. As one square inch of surface may contain 4,000,000 spores of smut, and every spore is capable of producing a smutty plant, it is important to carefully destroy every ball of smut.

Turnips.—The cultivation of turnips and rutabagas, consists of keeping free from weeds, and thinning out to a proper distance. One good root at every 9 inches, is far better than two or three poor ones in that space. To have good sound roots of any kind, sufficient room must be given.

Beets and Mangels.—Early sown beets and mangels, may be harvested late this month. If left later, the roots may become hollow and stringy. An over-grown root may be large, but its size is no indication of its value. We harvest our early sown mangels as soon as the larger ones become hollow, and find they ripen in the pits as well or better, than if left in the ground later. The tops may be fed to cows or sheep with benefit.

Pitting Mangels.—In pitting mangels lifted this month, care must be taken to manage them so that they will not heat. If a cool and well ventilated root-cellar is provided, there can be no safer place for them. In pitting them in the field, we gather 20 rows together, which makes a long heap, not large enough to cause heating. The roots may be covered with the tops, or with straw, held down by a few rails. Afterwards these rows may be gathered together into pits and prepared for winter.

Buckwheat.—This crop, being easily injured, should be cut after the first light frost. Low grounds should be cleared first; upon high ground the crop will not be touched by light frosts, and here it may be left later. The grain shells so easily that it should be harvested early in the morning, when moist with dew. After lying a few days to cure, it should be raked up when it is moist.

Beans.—If wet weather occurs when beans are ready to pull, it is necessary to protect them from the rain. This may be done by driving stakes in the ground, and stacking the beans around them, and then covering the top with straw. In pulling beans by hand, three or four rows may be thrown together, and left loosely, so that they will cure. Then, in case of threatened rain, they may be quickly gathered into stacks.

Corn should be cut as soon as it is ready. Early corn will be ready for cutting this month, and the stalks will be much more valuable when cut green than if left to be killed by frost. Frosted corn-fodder will not cure well, and is damaged for use. When the grain is well glazed, and hard on the surface, the crop may be cut. Early cutting helps

early curing, allows the husking to be done in good season, and the fodder to be housed before winter.

In Shocking Corn, the use of good bands will save much labor and loss. Some sheaves of hand-thrashed rye-straw, thoroughly well wetted, will make tough and strong bands. What is much wanted is a permanent and strong sheaf-band for this purpose, which will last more than one season, and will serve for corn and other grain. Osier willows may be profitably grown for sheaf-bands.

Potatoes.—Early potatoes should be dug without delay. A few rains will start the ripe tubers into new growth, to their injury. Late potatoes should be thoroughly cleared of beetles, before it is too late to prevent the larvæ from retiring to the ground for maturing. It is the last brood of insects which stocks the ground for the next season.

Rats.—The damage by rats is one of the most serious losses to which farmers are subjected. On the whole, this loss is doubtless greater than that from all the fires which occur upon farms. We have tried a preparation called "Poisoned Wheat," put up for the purpose of destroying vermin, and find it very effective. The rats disappear; that is, all that can be noticed. But poison of any kind should be used so that fowls or other animals cannot get it. To destroy the rats is now a timely work, and will prevent much future loss of grain.

Live Stock.—During the hurry of work at this busy season, the stock ought not to be forgotten. One of the most important requisites for health and thrift is regularity in feeding and watering. This refers not only to times of feeding, but to quantities and qualities of fodder. Now that grass is past its best state, the stock may have some roots pulled for them, or some corn-fodder cut, and young animals will be greatly benefited by a little concentrated food. It is important that live stock have a plenty of good fresh water, especially at this time of the year, when the herbage does not afford the abundance of juices of spring growth.

Sheep.—A run in a field from which early roots have been gathered will be beneficial to the flock. It will help to accustom them to the change of food which will soon be required. Small or imperfect roots may be left ungathered for them, which they will pick up for themselves. Where early lambs are not desired, the rams should be kept separate from the ewes; or, if it is not convenient, the ram may be aproned or "bratted."

Pastures.—The droppings of the animals on the pastures should be scattered and spread. This not only manures the field, but prevents injury to the spots covered with droppings. A dressing of plaster over the pasture will be useful, sweetening the fouled spots, and so avoiding the unequal character of the surface caused by the neglect of cattle to eat down the herbage in otherwise distasteful places.

Sundry Matters.—Harvesting machinery should be cleaned and stored away. The bright parts may be kept from rusting by coating them with paraffine or tallow. One of the best preparations to protect iron or steel from rust is made by melting a pound of fresh (not salt) lard, with a piece of rosin the size of a hen's egg—the exact proportion not important. Melt the two together, and stir as it cools; keep secure from dust, and use it on all parts of machinery liable to injury by rust....The bearings should be well wiped, and oiled with castor-oil. All dust should be removed, and, with costly machinery, it will pay to provide a sheet or blanket to cover it with as a protection from dust. ....Where swamp-muck is to be dug, it is best to give the work by contract. A good man can make fair wages at 15 cents a cubic yard; if the workman is not a good one, he cannot expect higher pay on that account. Muck should be dug before cold weather comes, as it is disagreeable work when the ground is full of cold water....Hay that is stacked should be hauled in, or the stack should be protected on the top by extra covering. Coarse herbage or weeds, *not in seed*, may be cut and hauled into the barn-yard, and spread to form a basis for a deep coating of manure and an absorbent for moisture. An abundance of litter will soak up the water, and prevent the drainage which so often flows from yards, and accumulates in foul pools.

Notes on Orchard and Garden Work.

This should be a harvest month of the orchardist and gardener, in more senses than one. Aside from the ingathering of the maturing products of his own orchard and garden, there are the various fairs and gatherings, from which the experience of the most successful should be reaped. The wide-awake fruit raiser, will not only be on hand at the fairs with his best fruit, but on the alert to learn how his competitors grew their products. Such a person will look upon the knowledge he can gain at the fair, as of much greater importance, than the money value of any prize he may secure. Too many go empty handed, and seeing what others bring, remark that they have better than that at home. Such persons make themselves very disagreeable, and deserve no better treatment, than to have their statements met with—"We don't believe it." These grumblers and boasters of what they left at home, are an injury to every fair, especially the smaller ones. They stand aloof and discourage others, instead of taking hold with their neighbors and making the fair what it should be. There is nothing that so interests one in a fair, as being an exhibitor. Every person should feel free to ask, (and answer too,) any questions that may come up; it should be a time for the liberal exchange of thought and experience. Those who simply go around and *see*, are not gaining the information that the opportunity offers. The County fair should be talked of, for weeks before it comes, so that all the people of the region will learn that "so and so" is to exhibit "this and that," and thus awaken interest and secure competition. Those who can do so should go, and take their best things, to the State fair;—but the first duty is to the fair nearest home. While it is wise to give to the fairs all the time that can be afforded, the work at home must not be neglected, as the season's profits depend largely upon the way the crops of the orchard and garden are cared for, picked, packed, and marketed.

Orchard and Nursery.

Apples.—It does not pay to market inferior specimens; but in this season of scarcity, it will pay to send smaller fruit, if fair and sound, than in years of abundance. Assort and pack with unusual care.

Cider.—While the best cider is made from late ripening fruit, and in cool weather, the inferior apples and windfalls may be made profitable, by making them into cider for vinegar. Even those who have a cider-house, furnished with a mill and press worked by power, find it profitable to keep a hand-mill and press, for the purpose of working up windfalls and inferior early fruit, before the cider-making season, on a large scale, begins.

Drying Fruit.—The primitive way of drying apples, peaches, etc., exposed to the sun and air, also exposes it to insects. Excellent dryers are now to be had, and at a cost which the increased value of the dried fruit will meet in a single season. These dry with artificial heat rapidly, turning out a handsome light-colored product. In drying in the old way for home use, protect the fruit from insects, by netting, and provide some arrangement to dry by the heat of the stove in a rainy day.

Budding is an important work at present, the most of the immense stock of peach-trees are budded this month, as are the pear on quince, and the cherry on the Mahaleb. The precise time depends upon the condition of the stock. The ties should be cut as soon as the buds have become firmly set, or have "taken," which will be known by their remaining plump and green and falling away of the leaf-stalk.

Peaches for shipping, should be gathered when mature, but before they begin to soften. A single over-ripe peach, will render an otherwise choice crate quite unsalable. Step-ladders should be at hand.

Pears should always be ripened off of the tree, and must be sent to market before they soften. Half barrels are handled with ease and safety, and this is a favorite package. It should be lined with white paper, and packed from the bottom. In no case should the fruit be shaken from the trees. Various pickers are in use for reaching the specimens which grow upon high and unhandy branches.

Planting.—In those parts of the country where the autumns are long, fall planting is coming into favor. The ground can be more thoroughly prepared, and planting can go on more carefully and with greater comfort. At this season raise a mound of earth about the newly set tree from 10 to 15 inches high; this will serve to keep water from settling about the roots, keep away mice, and serves as a support to steady the tree. Trees may be set out before the leaves fall, provided the wood is fully ripe, and the leaves are through with their work, and are only waiting for a hard wind to take them off In this condition the leaves are readily stripped off by hand. If trees are to be set in the spring, it is best to prepare the ground now, and to secure the trees and heel them in, in a safe place, where water will not settle about and do injury.

The Fruit Garden.

Blackberries and *Raspberries* are preferredly planted in the fall, as they make such an early start in the spring, that the shoots may get broken. Keep this year's canes cut back as directed last month.

Currants and Gooseberries.—Prune as soon as the leaves fall. Cuttings may be made at the same time, and planted at once in rows a few inches apart. A mulch may be applied with good effect.

Grapes.—In gathering choice clusters use the scissors which hold the bunch after it is cut, thus avoiding the touching of the berries, which removes the bloom and injures their appearance. Those to be packed in boxes should be placed in trays and kept in a cool place for a few days, until the skin toughens, when they are to be packed with great care, using 3 or 5 pound boxes. Pack by removing the bottom of the box. For the mildew and its remedy see article on page 348 of the present number.

Strawberries.—The beds should be kept clear of weeds. New beds may be made and set this month.

Kitchen and Market Garden.

When a crop is removed, clean off the ground, and dispose of any refuse and weeds. If no other use is to be made of it, occupy it with flat turnips.

Beets.—Continue to hoe the late grown crop, until the tops are too large. Some thinning of the late sowings may be done for greens.

Celery.—Keep clear of weeds. If some is wanted for early use, straighten up the leaves and draw the earth to them with the hands. But around New York, this operation is not performed until next month, as the plants will now make their most rapid growth in the cool nights and warm days.

Cabbages and Cauliflowers are benefited by frequent hoeing, and a dressing of guano or other concentrated manure is often applied with advantage.

Corn.—Dry a quantity for winter use—it never comes amiss. Save the best and earliest ears for seed. Cut up and cure the stalks for winter fodder as soon as the crop is off. Clean the ground.

Cucumbers.—Gather for pickles every second day. Let none ripen save those needed for seed, and they should be of the earliest, otherwise the vines die.

Martynias.—Gather for pickles while very tender.

Melons should be turned occasionally, as they ripen better. Remove the very latest ones as they set.

Onions.—Gather and store in a dry cool place.

Sweet Potatoes.—The largest may be removed from the rows for use, and the rest left to grow. Do not allow the vines to root at the joints.

Spinach for next spring is to be sown this month, in drills 15 inches apart. First thoroughly manure.

Tomatoes.—Destroy the large green worms. Make into catsup when fruit is abundant. Gather green fruit for pickles before frost comes and spoils them.

Turnips.—Hoe and thin the larger until prevented by growth of tops. The Strap-leaf sown before the middle of the month will usually make a crop.

Weeds.—Do not put them in the compost heap if already gone to seed. It is best to burn them.

Flower Garden and Lawn.

This is the season for the fullest show of out-of-door flowers, especially those in the larger beds.

Cannas are now beautiful, both as to rich foliage and flowers, especially when they are in a large bed.

Dahlias.—A large thrifty plant frequently needs several supports for its many loaded branches, or they will otherwise break down and look shabby. Remove all blooms when they are past their prime.

Chrysanthemums deserve more general cultivation for their beauty and lateness; coming when nearly all else has gone. They can be taken up and potted before the frosts come, and kept for several weeks in full bloom in the window or greenhouse. If lice are troublesome, give a wash with Tobacco Water.

Geraniums are fine late plants, and should make a bright showing during September. Cuttings for next year's stock may be made during this month.

Ornamental Trees and Shrubs may be transplanted in autumn, after the leaves are ready to fall.

Violets.—Provide for late winter use by means of a cold frame; cover with leaves when frost comes.

Greenhouse and Window Plants.

Every thing should be in readiness to take in the plants as soon as the cold weather comes....*Soil* and *Pots* should be at hand in sufficient quantity.... Remove the old *Sand* from the shelves, and use new to get rid of various pests....*Plants* for winter should be looked out for. Propagate geraniums and other bedding plants for a stock for next year. *Hanging Baskets* should be filled early that the plants may get well established....When a slight frost is expected early in the season, provide a covering for the choicest plants in the shape of a sheet, or even newspapers will do. It is wise to bring in the plants before they have been severely chilled.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our record kept daily during the year, show at a glance the transactions *for the month ending Aug. 11th*, 1879, and for the corresponding period last year:

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats*
27 d's *this* m'th	402,000	3,696,000	4,931,000	313,000	345,000	1,293,000
28 d's *last* m'th	341,000	2,987,000	5,104,000	196,000	312,000	1,171,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 d's *this* m'th	461,000	9,384,000*	8,116,000*	456,000	——	1,451,000
28 d's *last* m'th	456,000	8,148,000*	8,439,000*	289,000	——	1,393,000

* Including sales for forward delivery.

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 days 1879	402,000	3,696,000	4,931,000	313,000	345,000	1,293,000
27 days 1878	361,000	4,647,000	4,384,000	251,000	294,000	1,213,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 days 1879	461,000	9,384,000	8,116,000	456,000	——	1,451,000
27 days 1878	458,000	6,259,000	6,411,000	437,000	——	1,507,000

3. *Stock of grain in store at New York.*

	Wheat.	*Corn.*	*Rye.*	*Barley.*	*Oats.*	*Malt.*
	bush.	bush.	bush.	bush.	bush.	bush
Aug. 9, '79	1,688,000	1,313,000	99,650	45,100	351,400	169,000
Aug. 12, '78	1,127,000	598,750	62,650	203,200	472,400	137,000

4. *Exports from New York, Jan. 1, to Aug. 10.*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*	*Peas.*
	bbls.	bush.	bush.	bush.	bush.	bush.	bush.
'79	1,814,000	28,135,000	21,412,000	2,607,000	106,000	369,000	241,000
'78	1,508,200	27,101,200	18,289,900	2,561,900	1,515,150	2,086,000	306,100

5. *Tide-water Receipts at Albany, from opening of navigation to July 31:*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*	*Malt.*
	bbls.	bush.	bush.	bush.	bush.	bush.	bush.
'79	3,000	6,963,400	5,636,800	712,400	15,700	570,800	198,900
'78	3,100	9,856,000	10,114,000	723,000	304,000	2,221,000	197,000
'77	3,100	1,584,700	8,385,100	192,900	389,000	960,300	27,500
'76	13,700	7,597,000	2,565,000	337,000	114,500	2,791,200	365,500
'75	27,200	7,504,600	1,932,200	68,700	——	1,023,200	456,500

A brisk business has been reported since our last, in the Breadstuff line, especially in Wheat and Corn, but at lower and irregular prices. The offerings of Wheat have been on a much more liberal scale, largely on speculative account, and in good part of new crop, leading to a sharp decline in values of both Spring and Winter grades. At the reduced figures, the dealings have been very extensive, for shipment, as well as for speculative purposes; closing weak. The later foreign advices have been of an unfavorable tenor, and have tended to depression. Corn has been more sought after toward the close, and has shown more steadiness. Rye has been attracting much more attention from export buyers, leaving off more firmly. Oats have been moderately active, but unsettled, closing with more steadiness, particularly for White, which are most wanted by the local trade. Flour wound up heavily, on a more urgent offering, and comparatively moderate inquiry.....Provisions fell off materially, and closed in favor of purchasers, on a moderate movement....Cotton was quoted lower, and weak at the close, on a restricted business....Hops met with a readier sale at advanced prices....Wool ruled somewhat cheaper, on a freer offering of domestic product, and a comparatively tame market....Naval Stores and Petroleum have shown little animation, and have been quoted heavy....Hay and Straw have been in good request, and quoted stronger....Ocean freights have been decidedly more active, and quoted higher than before. The Grain movement has been of unusual magnitude.

CURRENT WHOLESALE PRICES.

	July 11.			Aug. 11.		
FLOUR—Super to Extra State	$3 50	@	4 50	$3 30	@	4 75
" Super to Extra South'n.	3 50	@	6 75	3 80	@	6 75
" Extra Genesee	4 60	@	6 25	4 75	@	6 25
" Superfine Western	3 50	@	3 90	3 80	@	4 15
" Extra Western	3 90	@	8 75	4 25	@	8 75
" " Minnesota	4 00	@	8 25	4 25	@	8 00
RYE FLOUR, Superfine	2 90	@	3 65	3 10	@	3 90
CORN-MEAL	2 00	@	2 55	2 10	@	2 75
OAT MEAL, ₱ bbl	2 75	@	6 00	2 75	@	6 30
WHEAT—All kinds of White	1 05	@	1 21	1 00	@	1 15
" Red and Amber	1 00	@	1 22	90	@	1 09⅞
" Spring	78	@	1 15	75	@	1 03
CORN—Yellow	43½@		52½	46	@	56
" White	45½@		52	47	@	55
" Mixed	41	@	45¾	44	@	46½
OATS	37	@	46	32	@	41
RYE	61	@	65	63	@	68
BARLEY	Nominal.			Nominal.		
HAY—Bale, ₱ 100 lbs	35	@	85	45	@	85
STRAW, ₱ 100 lbs	35	@	65	35	@	65
COTTON—Middlings, ₱ lb	12¼@		12⅝	11⅝@		11⅝
HOPS—Crop of 1878, ₱ lb	6	@	18	8	@	18
" " 1877, ₱ lb	3	@	5	3	@	5
" " olds, ₱ lb	2	@	3	2	@	3
FEATHERS—Live Geese, ₱ lb	35	@	47	35	@	47
SEED—Clover, West. & St. ₱ lb	Nominal.			Nominal.		
" Timothy, ₱ bushel	Nominal.			Nominal.		
" Flax, ₱ bushel	Nominal.			1 37½@	1	42½
TOBACCO, Kentucky, &c., ₱ lb.	2¼@		11½	2¾@		12
" Seed Leaf, ₱ lb	5	@	40	5	@	40
WOOL—Domestic Fleece, ₱ lb	20	@	40	18	@	40
" Domestic, pulled, ₱ lb	18	@	37	17	@	37
" California	10	@	20	10	@	20
TALLOW, ₱ lb	6	@	6¼	5¾@		5¾
OIL-CAKE—₱ ton	29 00	@	29 50	28 00	@	—
PORK—Mess, ₱ barrel	9 50	@	10 25	8 75	@	9 20
" Extra Prime, ₱ barrel	—	@	—	8 25	@	8 50
BEEF—Extra mess	10 50	@	11 50	10 50	@	11 50
LARD, in trcs. & bbls, ₱ 100 lb	6 10	@	6 75	5 70	@	6 20
BUTTER—State, ₱ lb	4	@	15½	5	@	17½
" Western, poor to f'cy, lb.	4	@	15½	5	@	17½
CHEESE	1	@	6	2	@	5½
EGGS—Fresh, ₱ dozen	10	@	13	9	@	13½
POULTRY—Fowls, ₱ lb	9	@	13	9	@	13
" Chickens, ₱ lb	16	@	25	12	@	17
" Roosters, ₱ lb	5	@	7	5	@	8
Turkeys—₱ lb	9	@	13	13	@	17
Geese, ₱ pair	87	@	2 00	1 12	@	2 00
Ducks, ₱ pair	40	@	60	45	@	60
Capons, ₱ lb	20	@	25	20	@	25
WOODCOCK, ₱ pair	—	@	—	60	@	75
SNIPE, per doz	40	@	2 25	—	@	—
PIGEONS, ₱ doz	35	@	2 00	25	@	1 75
PLOVER, ₱ doz	1 75	@	2 00	—	@	—
APPLES, ₱ barrel	1 00	@	2 50	1 00	@	3 00
PEARS, ₱ bbl	—	@	—	1 50	@	3 50
" ₱ crate	—	@	—	1 25	@	2 75
STRAWBERRIES, ₱ quart	5	@	11	—	@	—
CHERRIES, ₱ lb	4	@	8	—	@	—
RASPBERRIES, ₱ qt	2	@	7	—	@	—
GOOSEBERRIES, ₱ bushel	1 50	@	1 75	—	@	—
CURRANTS, ₱ lb	6	@	10	5	@	10
BLACKBERRIES, ₱ qt	4	@	14	3	@	7
WHORTLEBERRIES, ₱ qt	5	@	8	2	@	4
APRICOTS, ₱ quart	—	@	—	10	@	20
PEACHES, ₱ half bush. crate	1 50	@	4 00	75	@	1 25
" ₱ basket	—	@	—	20	@	1 00
PLUMS, ₱ qt	4	@	12	—	@	—
POTATOES, ₱ bbl	1 00	@	3 50	75	@	1 75
" Sweet, ₱ bbl	2 50	@	3 75	3 00	@	4 00
TURNIPS ₱ bbl	75	@	1 25	75	@	1 00
" white, ₱ 100 bunches	1 00	@	2 50	—	@	—
TOMATOES, ₱ box	1 00	@	1 50	50	@	75
RADISHES, new ₱ 100 bun	15	@	35	—	@	—
BEANS—₱ bushel	1 00	@	2 85	1 15	@	2 50
PEAS—Canada, in bond, ₱ bu	72	@	75	70	@	—
" new, ₱ bag	75	@	1 00	1 25	@	1 75
STRING BEANS, ₱ bag	50	@	1 25	75	@	1 50
BROOM-CORN	2¼@		6½	2¼@		6½
CARROTS, ₱ 100 bunches	—	@	—	1 00	@	2 00
BEETS, new, ₱ 100 bunches	1 00	@	3 00	1 25	@	2 00
CABBAGES—₱ 100	2 00	@	5 00	2 00	@	6 00
CAULIFLOWER, ₱ doz	75	@	3 50	1 00	@	4 00
ONIONS—₱ bbl	3 00	@	4 00	2 50	@	3 25
" ₱ crate	1 00	@	1 75	—	@	—
SQUASH, ₱ bbl	—	@	—	50	@	75
CUCUMBERS, ₱ 100	—	@	—	25	@	50
WATERMELONS, ₱ 100	15 00	@	30 00	5 00	@	25 00
MUSKMELONS, ₱ bbl	—	@	—	50	@	2 00
EGG PLANTS, ₱ bbl	—	@	—	1 50	@	2 00
OKRA, ₱ 100	—	@	—	12	@	18

New York Live-Stock Markets.

RECEIPTS.

WEEK ENDING	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
July 14	13,590	81	5,866	32,838	21,237
July 21	12,948	211	4,387	36,163	21,052
July 28	14,143	202	4,564	35,881	17,657
Aug. 4	11,140	233	3,416	28,597	17,835
Aug. 11	13,290	144	3,825	31,286	18,974
Total for 5 Weeks	64,111	891	22,058	164,735	96,755
do. *for prev.* 4 Weeks	45,643	287	18,850	142,964	109,387

	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
Average per Week	12,822	178	4,411	32,947	19,351
do. do. *last Month*	11,412	72	4,712	35,741	27,347
do. do. *prev's Month*	10,648	65	5,306	31,706	34,804

The prices for the past five weeks were as follows:

WEEK ENDING	*Range.*	*Larger Sales.*	*Aver.*
July 14	7 @10½c.	8¼@ 9¼c.	8¾c.
July 21	6 @10¼c.	8¼@ 9¼c.	8¾c.
July 28	6½@10¼c.	8 @ 9¼c.	8½c.
Aug. 4	6½@10¼c.	8¼@ 9¼c.	8¾c.
Aug. 11	6¾@10¼c.	8¼@ 9¾c.	8¾c.

Beeves.—The market has been very irregular, the changing supply influencing trade and prices almost every day. The week ending July 28, there were received the largest number of beeves ever known in this market, and a very unsettled business resulted. An improvement was made after a falling off in receipts of 3,000 head in one week, but prices remain weak, and but for the export demand they would undoubtedly fall off considerably. The closing business was dull and unsettled, with a scarcely successful effort to advance prices. Sales were made at the close at 7@7¼c. for Colorados, 55 lbs. to the cwt.; native steers of same class at 8c. ₱ lb; good to prime beeves at 8¾@9½c., and extra, 56 to 57 lbs. to the cwt., at 9¾@10¼c.... **Cows.**—The market has been overstocked, poor cows have sold for $20, and good ones have been slow of sale at $40@$50 per head....**Calves.**—The business in veals has been changeable and irregular. With an alternate surplus and scarcity of stock, prices have fallen off or advanced; a firm feeling and higher prices are to be noted at the close; buttermilk calves sold at 2½c. ₱ lb., grass and fed calves at 3½@4c. ₱ lb, milk veals at 4½@6c., and extra at 6½@6¾c. ₱ lb, all for live weights.....**Sheep and Lambs.**—As usual, prime stock have been in demand at full prices, while common have been hard to dispose of at low prices, even with unusually low receipts. Prime sheep were in demand, as we close our report, at full prices, viz.: 4½@5¾c. ₱ lb; poor sheep sold at 3½@4¼c. ₱ lb. Heavy sheep for export sold at 5c@5¾c. ₱ lb, and lambs brought 4½@6c. ₱ lb, all for live weights....**Swine.**—An advance in Chicago strengthened prices here, and we note a strong market for live hogs at 4½@4¾c. ₱ lb, with an upward tendency; $4.30 per 100 was paid for 175 to 200 lb. Western hogs.

The Horse Market.—Sales have been light, without change in prices. Street car horses have sold at $115@$130 per head; farm horses at $100@$140; heavy draft horses at $200@$350; coach horses have sold at $500 to $800 per pair; Indian ponies and Shetlands are offered in excess of the demand, and there are no sales at present. Several lots of horses are now ready for or in course of shipment for export.

Prices of Fertilizers.

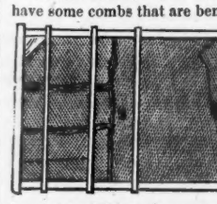
Nitrate of Potash (95 per cent.), per lb.	9	@9½c.
Sulphate of Potash (potash 44 per cent) per lb	3	@3½c.
do. do. (potash 27½ per cent) per lb.	1¾@1¾c.	
German Potash Salts (potash 12 to 15 p. c. p. ton	$15.00@18.00	
Muriate of Potash (potash 50 per cent), per lb	2	@2½c.
Nitrate of Soda, per lb	3¾c.@4¼c.	
Sulphate of Ammonia (25 per cent.), per lb	4½c.@4½c.	
Dried Blood (ammonia 13 per cent) per ton	$40.00@45.00	
No. 1. Peruv. Guano 10 p. ct. ammonia, standard, ₱ ton	$58.50	
do. do. Lobos, do. do, do	47.50	
do. do. guaranteed, ₱ ton, cargo K	56.00	
do. do. rectified, per ton, 9.00 p. c.	65.00	
do. do. do. 8.40 p. c.	51.00	
Soluble Pacific Guano, ₱ ton	45.00	
Excelsior Fertilizer Works, Fine Ground Raw Bone	55.00	
Mapes' Complete Manure (clay soils) per 1,000 lbs	25.00	
do. do. do. (light soils) per 1,000 lbs	25.00	
do. do. do. "A" Brand, (wheat) ₱ 1,000 lbs	30.00	
do. Bone, strictly pure, meal ..... per ton	42.00	
do. do. do. medium	do.	36.00
do. do. do. dissolved	do.	42.00
Stockbridge Rye Manure, per ton	45.00	
" Wheat do do	45.00	
" Seeding Down Manure, per ton	40.00	
" Turnip Manure, per ton	50.00	
Bowker's Wheat Phosphate, per ton	40.00	
Baugh's Raw Bone Phosphate, per ton	35.00	
Baugh's Manure for Tobacco and Grain, per ton	45.00	
Walton, Whann & Co.'s Raw Bone Phosphate	40.00	
Gypsum, Nova Scotia, ground, per ton	8.00	

Bee Notes for September.

BY L. C. ROOT, MOHAWK, N. Y.

In most locations, the general honey yield is now over. If partly-filled boxes yet remain upon the hive, they should be removed, and all upward ventilation prevented. If extra combs have been supplied for extracting, they should be taken out, and the bees confined to the combs in the brood-nest. These combs must be watched, and if the moth-worm begins work in them they should be smoked with brimstone. If the two-story hive has been used for extracting, the part containing the queen and brood may be placed at the top, and the one with empty combs allowed to remain below, until later in the season, where the bees may protect them from the moth. The honey in the unfinished boxes should not be allowed to remain in the combs and become candied. If it is needed in the hives, it may be uncapped and placed upon the hive when the bees will remove it, if done when they are not gathering honey from flowers. If this is not desirable, the honey may be removed with the extractor and the combs saved to use in boxes the ensuing season. The requirements for successful wintering should now be borne in mind. It is very essential that each hive be supplied with a prolific queen. There is an advantage in furnishing colonies with young queens at this season, as they usually deposit eggs more freely, and continue to do so longer than old queens. As it is extremely desirable that each colony be supplied with a large number of young bees when it goes into winter quarters, the importance of using every means to secure them is apparent.

CURVED COMBS.—Wm. L. Hyde, Lyme, Ct., says: "I have some combs that are bent almost square. Can they be straightened out and put into frames without injury?".....



Most crooked combs can be straightened by the use of transferring sticks. Where they are bent at a right angle, or nearly so, they should be cut apart, and the edges put together, as in the engraving.

WORMS' NESTS.—"Will worms' nests in the hive do any harm to bees? The worms are of a brown color, and about half an inch long."....These are the larvæ of some other insect than the Wax-moth. Remove as far as practicable, and if the combs containing them are placed in a strong colony, the bees will probably eject them.

THE DOGWOOD.—"Is the Dogwood tree valuable for pollen or honey?"...."Dogwood" in this section is not.

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Begin Sending Names for the Premiums at Once.

The Fairs are now being held, and these furnish a capital opportunity to make up premium clubs. There will be good premiums for two, three, or four names, and upwards to any number.

Please state it when any name is designed for the premium list, and give your own name and address, and it will be entered to your credit in the Premium Record. You can then, at any time, select any premium desired in accordance with the number of subscribers sent in up to any date.

A Great Help

to forming Premium Clubs NOW will be found in the above offer to enter the new names at once without extra charge.

containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of room elsewhere.

Clubs can at any time be increased by remitting for each addition, the price paid by the original members; or a small club may be made a larger one at reduced rates, thus: One having sent 6 subscribers and $7, may afterwards send 4 names more and $3, making 10 subscribers for $10.00; and so for the various other club rates.

Bound Copies of volume 37, and of every previous volume back to Vol. XVI. (1857), neatly bound, with gilt backs, Index, etc., are supplied at $2 each (or $2.30 if to be sent by mail). See Publishers' Notes, 2d cover page.

Read the Advertising Columns.—Letters are daily received by the editors, asking where pigs, fowls, seeds, fertilizers, machinery, etc., can be procured. We consider all the information of this kind that is given in the advertising pages sufficient, if those needing anything will only look there; and can not find room to repeat what is already plainly told elsewhere. Every page of the *American Agriculturist,* including the covers, is interesting reading, and should all be carefully examined every month. In addition to looking after what one may want, the reading of what others have to say, in offering their wares, etc., starts up some new idea in the mind of the reader.—When writing to any advertiser, always tell him in what paper his advertisement was seen.

The German Edition.—All the principal articles and engravings that appear in the *American Agriculturist* are reproduced in the German edition. Besides these, there is a special department, edited by an eminent German cultivator. Our friends can do us a good service by calling the attention of their German neighbors and friends to the fact that they can have the paper in their own language, and those who employ Germans will find this Journal a most useful and acceptable present.

The "School-Master is Abroad."—In recent travels through several Western States, we were struck with the fact that in cities and villages the most imposing, well constructed, attractive buildings that meet the eye are the Public Schools. This is the case generally from Wyoming and Colorado eastward. Few villages of 2,000 to 3,000 population, in the older States, have as fine public school structures as that seen in Laramie, almost on the summit of the Rocky Mountain range (at an elevation of over 7,000 feet), and like Institutions everywhere abound all over the West—showing unmistakably that the enterprising people who have swarmed from the parent hives have carried with them a full appreciation of the benefits of education. It argues well for the future of our free government to see such ample provisions for making the next generation of future governors of the country—the people—*intelligen.* voters.

How the Arrow Heads were Made.—It has always been a mystery how the Indians made their arrow heads. An antiquarian student has put himself in the place of these ancients, and found that by the most skillful chipping of one flint with another, nothing like the shape or surface of the arrow head could be produced. By chance, in trying various devices, he used pressure with a stick, when the peculiar, and characteristic surface was readily produced by this process, of "flaking" by pressure.

The National Agricultural Congress will hold its next (semi-annual) session at Rochester, N. Y., on the 15th inst. The early growth of this Association has been slow, but it has shown persistence, and we hope that the agriculturists of the country will take hold and make it what its title indicates it should be—a truly national body. That such an association is needed, we think that there can be no doubt, and it should be the endeavor of those who have carried it so far, to increase its usefulness by enlisting as large a number of farmers as possible in its ranks. The President is Doct. Thos. P. Janes, Atlanta, Ga., the efficient Commissioner of Agriculture of Georgia. Of Vice-Presidents there is one from each State; the Secretary is Jonathan Periam, Chicago, Ill., and the Treasurer, Ezra Whitman, Baltimore, Md. One can become a member by sending $3 to the Treasurer, and this entitles him to a copy of the Transactions. There seems to be a capital chance here to do something for the good of the agriculture of the country. Let us do it.

Our Fair List will be found upon pages 361 and 362. The value of a List of Fairs, depends of course upon its accuracy, and the only method by which this can be secured, is to give the dates and places from official sources. With this view, we, some months ago, requested the Secretaries of the various societies, to send us their announcements, as soon as their dates were fixed upon. A very much larger number have complied with this request than in any former year, and for this, these officers will please accept our thanks. Kansas, which is far ahead of some older States, in everything that relates to agriculture, sends out through the most efficient Secretary of her State Board of Agriculture,— the Hon. Alfred Gray, a list of all the fairs to be held in the State; an example commended to other State Boards of Agriculture. Where official information has not been furnished, we have taken the announcements, as given in the leading papers of the States, etc. It will be noticed, that in some cases, we have given dates in August; this is done to show that these fairs have already taken place, and to save trouble in looking up the date. To our readers, we say—go to your local fair, by all means, and to as many more as may be. Not only go, but exhibit something—your best, whatever it may be.

To Those Who Send Us Papers, containing an article to which they would call our attention, we must request that they direct the paper to "The Editor," or mark the article very conspicuously,—in fact it is better to do both. If a paper is merely directed to the *American Agriculturist*, or to the Orange Judd Company, the clerk who opens the paper mail, can not know that it is not one of the regular exchanges.

Root Cutters.—"V.," Phillipsburg, N. J., sends sketches, (see figs. 1 and 2,) of knives for cutting roots for a cow, either in a tub or a box. A bushel may soon

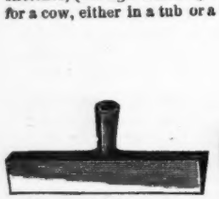


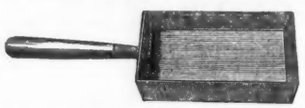
Fig. 1.

Fig. 2.

be cut up by using one of these knives, fixed upon a shovel or spade handle, as shown in the second figure.

We Give It Up!—We really do not understand it. It is quite beyond our powers of guessing, why people should do so. Here is a strawberry grower who sends a carefully written letter, the "hand" being neater and plainer than often comes to us. He tells us his method of culture, and complains that for three or four years he has had poor crops, and says: "Now being the time to plant, I would like to know what you think is the trouble and how to remedy it."—We could have answered these questions at once on a postal card; "now being the time of planting," he wants his answer "now"—but he merely signs his letter "A. W. L."!!....Another is in want of a book of recipes, he gives us in full his idea of the kind of book he wants, and finishes his letter by "J. H., City." While an answer to this, being purely personal, would be out of place in our columns, we would have willingly sent it by mail—but "J. H., City," is scarcely definite enough. We have repeated it so often that it should be understood, that letters or postal cards without full names, merely represents time and trouble lost by the sender. We take "A. W. L." and "J. H." as examples of this most unaccountable omission, which is of almost daily occurrence. Why do people write careful letters and then omit their names?—"We give it up."

Feeding Calves.—Young calves will thrive far better if a mouthful or two of mixed food be given to them occasionally. When running in a pasture by themselves, or with a few dry cows for company, they may be fed by the means of a small-handled box shaped in the



manner shown in the engraving. With a pound or two of meal (bran, cotton-seed, and linseed, in equal parts), in the box, the owner may go among his calves (lambs may be treated in the same way), and call them to him, giving each one a mouthful or a nibble in turn. This will tame the young things as well as help their growth.

Notes on Fences.—The farm fences of the United States, are estimated to cost 1,350,000,000 dollars, and require 250 millions of dollars, annually, to keep them in order. Besides the direct cost of fences, the land which they occupy, and render worthless, is an important consideration. The zig-zag rail fences, with stakes and riders, on an ordinary farm, occupy five per cent of the land, or five acres in every hundred. In view of this, a straight fence, other things being equal, is the cheapest. The wire fences of various styles, now used, are to be commended as economizing space, and being durable.

Sundry Humbugs.

In writing of the humbugs of which farmers in particular are made the victims, we have often repeated the caution: "*Farmers, be careful what you sign,*" and have given cases in which farmers incurred heavy losses from not observing this caution. This has caused several to write us to this effect—we put the substance of several letters in our own words. "Why do you take so much trouble to caution farmers about signing their names? If any farmer is foolish enough to sign his name to any paper without knowing what he signs, he deserves to suffer for it, and to lose his money." Such a view of the matter is all very well for those who have a sufficient knowledge of the wickedness of the world to be always on their guard against "the ways that are dark and the tricks that are vain;" but those who write in this manner have very little knowledge of the average farmer, as we find him the country through. The very fact that

THE AVERAGE FARMER IS HONEST

himself, and consequently unsuspecting, makes him all the more liable to be selected as a victim by sharpers. Those who write thus must know several farmers of this kind. Farmer Williams, for example, is a farmer, and nothing else; his farm is his world. His father was a farmer before him, and his chief hope is that his oldest son may be a farmer to follow him. His family circle is to him his foretaste of Heaven, and his farm and his family the objects to which he gives his best thoughts, and for which he works so long as there is any work in him. To such a man, the idea of wronging another is just as foreign as the idea of murdering his wife and children. He couldn't measure his grain in a false measure, or weigh his butter with light weights. Being without guile himself—it being something utterly foreign to his nature—we do not think it all remarkable, but altogether to his credit that he does not suspect wrong in others. Therefore,

WHEN HE IS ASKED TO SIGN HIS NAME,

such a man thinks of no wrong. That enormity which will induce him to put his name to what he supposes to be an order for some article, but which turns out to be a note, it is something of which he has no idea. We do not blame the honest farmer because he is defrauded, but regret that he places too much confidence in strangers. It is not because the farmer is ignorant, that he is so often selected as the victim of sharpers, but because, *being honest himself*, he is unsuspicious of others. With this view of the matter, we begun our warnings: "*Farmers, be careful what you sign,*" which in view of recent developments we have changed to:

FARMERS, DO NOT SIGN YOUR NAME TO ANYTHING.

An honest man stands no chance against dishonest sharpers, and it is safer for farmers to forego all prospective profits from any transaction than to risk the troubles that may follow the signing of any paper whatever. Travelling agents come along and offer Farmer Williams great inducements to take the sale of some implement or gimcrack for his neighborhood. We say, Farmer Williams, don't. Stick to your farming, and don't undertake the sale of patent spring beds, new mowing machine knife grinders, new and wonderful plants, marvellous oats, or any other implement or seed whatever. The glib-tongued travelling agents will show you that you must have their things for yourselves, and to sell to your nighbors. Let these all alone.—Those who think it serves the farmer right if he suffers because he is inveigled into signing what is offered as a mere receipt, but turns out to be a note, do not know the farming community so well as we do. Not only are farmers made victims of this fraudulent note business, but there are several

HUMBUGS ESPECIALLY DESIGNED FOR FARMERS,

founded upon farm operations, or in the shape of trees and other fruit plants, presented with claims as to wonderful productiveness or great superiority in other respects. In this latter class we have had "self-pruning grape vines"; strawberries that grow upon "bushes"; peaches budded on the "Canada Willow", and others free from all disease, and other things, of like character. The latest special fraud upon farmers is *William V. Horton and his Stump Clearer.* William V. is in New York, in fact in Nassau St., and he advertiseth in the country papers to the following effect. William V. says:

"STUMPS!
REMOVED WITHOUT
BORING, BLASTING, OR BURNING.

By our process, NEW and old stumps can be effectually removed from the land the first three months at a cost of less than half a cent per stump. Enough material to kill and remove 250 large NEW stumps, with instructions to apply the same sent on receipt of $1.00. A boy ten years old can apply the material to kill and entirely remove from the land 250 large NEW stumps per day."

More than this, William V. sends out circulars which sets forth the excellence of this method of stump extracting in full. If one half these claims were true, the readers of the *American Agriculturist* ought to know it, especially as the head-quarters of the "Stump-puller" were not very far from our own office. The matter was of sufficient importance for one of our editoral staff to make a personal examination. He went to the place in Nassau St., and found the usual narrow stairways, the numerous offices, the array of motley signs, but no "Horton" or "Stump-puller." Then commenced a search upstairs and down stairs; he was told that there was no Horton in the building; was informed that there was a Mr. Hoyt. At last, somebody recollected that a letter had been directed to a Mr. Horton on the floor below, and after much search, the

LOCAL HABITATION OF HORTON WAS FOUND.

We give our associate's report of his experience: "I found myself in the presence of a young and plump-looking man."—"What will you have sir," he said in a very welcoming tone.—"I wish to inquire for Mr. Horton," I said.—"William V?"—"Yes—the man who has a way to pull stumps fast."—"Well, he is not in [they never are]. He is out in Piedmont, New Hampshire [there is no such place in the Gazetter or P. O. Directory], but we do his business in his absence; and if there is anything special, can send it to him."—"I only called to inquire about the method of pulling stumps and see some of the material which you use, if it is some sort of chemical."—Wm. V's. authorized agent then took me back into his little office and gave me a chair. He said: "The substance which we use is a white powder."—"I should like to see some, as a friend of mine is greatly troubled with stumps," I said, growing interested.—"Well, we have none in it here to-day, we expect some every hour; our orders are supplied directly from the factory; our letters come here, and we open them and send them directly to the factory to be filled."—I thought I saw the *factory*, which stood near my chair, and it was *filled*. I felt so sure of it that no questions were asked on this point. "How is this powder applied?" I asked the sage of stump-killing.—"You drive two nails, one at the root of the stump, and the other at the top, and connect them by a wire, then a pinch of the powder (he showed me how to take it up with his hand), is put *right on* the head of the upper nail, and this produces a current of electricity, and in a short time, about three months, the *whole* of the interior of the stump disappears."—"That is quite wonderful, and it must be a great saving of labor, for we find it takes a large stump several years to rot down, and it is hard at the bottom."—"Yes, it is a great discovery and *invention*—you see it is *electricity* that does

it, and we do not know much about electricity."—I said, "that it was very true—lightning can perform many wonderful freaks," and spoke of the vivid lightning which we had during the last two days. There was a pause—a stillness for a second—and not caring to be interviewed as to *my* stumps, their number, locality, etc., I thanked the philosopher and withdrew. P. S.—He said "If the bark does not loosen in about seven days, it is best to put on more of the powder."

A STUMP, TWO NAILS, A WIRE, AND SOME POWDER!

What a stupid humbug! But, by the way, William V., a friend of ours, within an hour of New York, sent you the money for some of your powder over two weeks ago. Why don't you send it?

We are glad to notice that several papers are taking an active part in exposing the

VARIOUS SWINDLES UPON FARMERS.

The "Utica Weekly Herald" and the "Watertown Despatch," both in N. Y. State, are deserving of special credit for their efforts in this direction. According to the "Despatch," rogues named Johnson Wood, M. V. Quick, and another, whose name is not known, have been operating in Jefferson Co. in behalf of a "Co-operative Fertilizer Co." These parties called on one M. O. Robbins, to make him an agent for the sale of a fertilizer which they claimed to have. Mr. Robbins gave them the following note:

SACKETT'S HARBOR, July 22d.

$150.00.

Six months after date I promise to pay to the order of myself One Hundred and Fifty Dollars, at the First National Bank at Watertown, for value received.

[Signed] M O. ROBBINS.

It was explained to Mr. R. that the note was of no value, being made to his order, until he signed it, which he need not do until he found the fertilizer perfectly satisfactory. After more talk of this kind, Mr. R. was shown the back of the note, on which was the following statement, to which the maker of the note was requested to put his name. It reads thus:

I hereby certify that I own and am worth in personal and real estate in the County of Jefferson, State of New York, $8,000 over and above all indebtedness, and that the within note is given for goods bought by me of the Co-operative Fertilizer Company, and the above is in full demands of every name and nature between said Company and myself up to date of this note.

[Signed] M. O. ROBBINS.

When Mr. Robbins had signed this mere statement, or "mere matter of form, you know," contract,

HIS NOTE WAS ENDORSED BY HIMSELF,

and he was held for the amount. This view occurred to Mr. Robbins all too late, but he started in pursuit, and fortunately found the swindlers at Utica, where he had them arrested. Whether they can be held, the "Herald" is in doubt. That journal states that others have been victimized in the same manner. Are we wrong in our caution:

FARMERS, DO NOT SIGN YOUR NAME TO ANYTHING?

The "Utica Herald," in reference to this matter, says it has "no sympathy" with those who become victims to such swindlers. It says:

It seems to be useless to warn farmers to keep out of all transactions of this kind with strangers. Every farmer can find well-known and trustworthy business men in their own town or in the nearest city, who will provide them with everything they require at reasonable rates, much cheaper than any travelling agent can afford to sell even if he is honest. Sensible people have lost all sympathy for the gudgeons who bite at every bait that shrewd men throw to them. Avarice is generally at the bottom of such bargains.

While we admit that there is some truth in the remarks of the "Herald," they are altogether too sweeping. We have given above a different view of the matter, and to the reasons there given, we may add

A CHRONIC INABILITY TO SAY "NO"

possessed by many good-natured people. While avarice may be the motive in some cases, we think that unsuspecting good-nature is accountable for many more.... Syracuse, N. Y., is said to be the headquarters of much of this kind of swindling. There is said to be a raid on foot from that place into Pennsylvania. *Pennsylvania Farmers, look out for the man with a churn.*

PURCHASING THE "QUEER."

As strange as it may appear, after the exposures that the *American Agriculturist* begun long ago, and which have been taken up and followed by the daily papers, there will be persons who are foolish enough to be caught by the circulars of those who pretend to offer counterfeit money at about 10 cents on the dollar. We always feel glad when one of these chaps gets caught, for no honest person can have any dealings with those who offer, under various names, counterfeit bank bills. Simpletons go to buy, pay their good money for a parcel supposed to contain counterfeit notes—are hurried off through a pretended fear of the police, and when the victim gets in a place where he can examine his purchase, he finds no counterfeit money, but only a made-up parcel of paper. The latest victim is one O'Reagan, who keeps a hotel in New Brunswick, who came all the way to New York to buy counterfeit money—what did he intend to do with it?—and was put off with a bundle of kindling wood. The man was foolish enough to complain at one of the Police Courts. He received very little satisfaction, and went home, let us hope, a wiser, if not a better man. When people act upon the fact that nothing *worth* one dollar is ever sold for less than 100 cents, they will stand less chance of being swindled....A correspondent asks our opinion of an attractively advertised

GIFT BOOK SALE,

in which the purchaser of a book for a dollar, has a chance to draw all sorts of prizes. This so-called "sale" comes under the head of lotteries, and our opinion of the whole *breed*, no matter by what name it may be called, is too well known to need repetition. We advise all to keep clear of the lottery, no matter for what purpose it claims to be held, or whatever end it may have in view. If under a charter from any State—and many claims of this kind are fraudulent—so much the worse for the State. If under the management of any Generals, as some claim to be—so much the worse for the Generals; they add no respectability to the lottery, while their connection with it degrades them. Any General out of business, should be able to find some more respectable employment than that of "Manager" of a lottery.

VARIOUS MEDICAL MATTERS.

For several months past, the medical portion of our Humbug budget has shown but little novelty, but we now find, what is just as good as a novelty, that

OLD MOTHER NOBLE STILL LIVES,

or, at least, her wonderful "Healing Syrup" is still sent out, and that the lithographed circular of the man of the diamond-studded shirt-front, is still sent to induce parties to engage in the sale of the stuff. We have seen the time when, returning from a long voyage, New York harbor seemed like an entrance to a happy land; we have in foreign countries seen the American flag afloat, when it seemed the most beautiful thing we ever beheld—but what were these feelings to the emotions felt as we renewed our acquaintance with

OLD MOTHER NOBLE'S CIRCULAR.

The "view of the residence of Mrs. Deborah Noble"—that house, those fence, and dear old Debby herself coming down the road with a tremendous old *she* lalah—or perhaps a broomstick, is enough to awaken the finer feelings. In turning back the pages, we find that picture of "The Place where this Remarkable Discovery was Made," and it comes just as near bringing tears to our eyes as it did years and years ago. But what are these accessories as compared with the picture on the very firstest page of old Deb. herself. There she is—with the Bible—stated so in letters, according to the size of the book, about 6 inches long, and it rests upon a plank at least 6 inches thick—Debby is wiping her spectacles "on the edge of her apron," just as she used to do it, and her "daughter Abigail" has the same cup and spoon and everything is lovely. The story of old Debby Noble is not to be allowed to die out—at least not so long as there are people foolish enough to believe it.

"IS NOT THIS A HUMBUG?"

Is written upon several pamphlets sent out by "Medical Institutes," owners of "Restorative Remedies," Treatises for "Self Treatment" and the like. These pamphlets, of which we have several before us, all treat upon matters which we do not care to discuss in a paper read by the whole family. We can only say that they are pernicious in the highest degree. They all begin by exciting the fears of young men—and they seem to be published solely to reach these—and they lead them on, by adroitly written descriptions, to believe that their only hope of recovery is in taking some particular nostrum.

OUR IDEAS OF SUCH MATTERS,

have been stated so often, that they should be known to all but very recent subscribers. They may be summed up in brief: Do not undertake to medicate yourself. Do not take any secret preparation. Have nothing to do with a so-called "doctor" who publishes his cures. In short, let all of these chaps who send out pamphlets and circulars, severely alone. If a "retired physician" or a "former missionary" advertises to send free of cost a "prescription" for any kind of "weakness" or "debility," let that quack and his prescription alone. The "prescription" is advertised as "free," but, as we have shown again and again, it is only a dodge to sell *stuff*.

Willows and Osiers.—Many suppose that *Osier* is the general term for all basket-willows. This is a mistake, and one which has probably given the impression that willows could not be grown in this country. The Osier (*Salix viminalis,*) is the very poorest of the basket willows, fitted only for the coarsest work. Hence it is necessary for those who would grow willows, to look into the matter of quality, and plant the better kinds. It is a common notion that willows grow best on wet land. It may be that the plants will grow faster, but the best basket willows are grown on any good grain-land, and are injured by undue moisture in the soil.

Cauliflower Seed.—"O. C." But little seed of cauliflower is grown in this country, our summers being too hot for it. Those who do attempt to raise it, sow the seeds in July, and when the plants are large enough, set them out in rows, as if they were to grow a crop. By fall the plants will be partly grown, and they are then set in cold-frames, or placed in a cool cellar, with earth about their roots, the object being to preserve them in a dormant condition. In early spring, the plants are set out to complete their growth, flower, and produce seed.

Stump Puller.—"F. S.," Longlake, Ill. Stumps may be pulled out, if they are not too large, by the use of a long stout lever fastened to the stump by means of a chain and a hook, so as to give a twisting motion when the free end of the lever is pulled by a strong team. A stump puller, consisting of two chains and a lever, by which the chains are drawn up alternately, was described in the *Agriculturist* for September, 1871. (See page 338.)

Winter Pasture for Sheep.—"J. W. D.," Limestone Co., Texas. Winter oats *may* be bad for sheep, but if so, it is probably because the sheep will eat too many of them when wet with dew, or when rusted, and thus become affected with indigestion and bloat. Any green crop, fed in winter, is more or less subject to the same objection; but rye is less succulent and rich than oats, and for this reason, perhaps, is more popular for winter pasturage in the Southern States. If caution be exercised to prevent over-eating, the only source of danger, oats may be sown, if otherwise more desirable.

The Bag-Worm, Basket-Worm, or Drop-Worm.—In summer we expect to recieve specimens of this insect. This summer they have been sent in unusual numbers, but hope this is an indication that our readers are more observing, rather than that the insect is unusually numerous. To give a brief history of the insect: In winter, various trees will be found bearing objects like that shown in the engraving. If these are examined, some will be found empty—the males having left them; others will contain numerous eggs, and the shrivelled remains of the female. These eggs hatch in May, the minute insects leave the case, fix themselves upon a leaf by their fore-feet, and with their bodies erect, tail upwards, begin to spin a case, and cover it with bits of leaf. As the insect grows, it increases the size of the case, and when large enough, this hangs downwards, instead of being erect as at first. The caterpillar within, moves the case from place to place as it needs food, and makes its growth entirely within it. When full-grown, the case is made fast to a twig—not to a leaf, for that may fall—and the caterpillar goes into the pupa state, and finally becomes a small moth. The male leaves the case, but the female does not; she lays her eggs within it, and dies there. The insect visits almost every kind of tree; among evergreens, it is especially fond of the Arbor Vitæ, but it is found upon deciduous trees, those planted for shade, as well as fruit trees. The appearance of the case, bag, or basket, will depend upon the tree it inhabits; some are covered with bits of dried leaves, others with the footstalks of leaves, and on the Arbor Vitæ, they use short bits of slender branches. We found this, or a related species, upon the "Screw-Bean," in New Mexico, with the bags covered with the small white thorns of this tree, forming a perfect protection from any bird that might attack it. The insect is very destructive and increases quite rapidly. It has several natural enemies, which keep it in check, but it will not do to depend upon these. The only remedy thus far known, is to hand-pick them. Doct. W. B. Dewees, Lebanon Co., Pa., sends specimens, and writes that in a portion of his County, whole orchards are suffering severely from its attacks. In an orchard, the bags should be entirely removed, and this can be best done when the leaves are off. It may be a troublesome job, but it is the only way to get rid of these destructive pests, whether on fruit, or ornamental trees. The scientific name of the insect, is *Thyridopteryx ephemeræformis*; there are two or or three others with similar habits, one feeding upon the Orange in Florida.

BAG-WORM.

Pickling Seed-Grain.—The unusual presence of smut the present season, makes it desirable that more than usual care should be taken to free seed-grain from it before it is sown. The smut is produced—as was shown last month, on page 301—from a minute spore, which serves the purpose that seeds do in ordinary plants, and it is desirable to destroy the spores wherever they may occur. The grain can be cleansed and the smut spores destroyed by steeping it in a pickle of strong salt brine, or a solution of 4 ounces of Sulphate of Copper to a gallon of water. The seed may be put into a tub with the solution and steeped two hours; or it may be put into a basket and the solution poured over it. This is an easy method and may be done as follows. Procure a bench or a block upon which the basket may stand (see engraving), arrange a sloping board, upon which the basket of seed is placed, so that the liquid will drip from the board into a pail after it has washed the seed. The pickle poured upon the seed in the basket flows through it and washes much of the smut from it, carrying it down the board and into the pail. The pail is covered with a piece of folded flannel or blanket, and the pickle filtering through this leaves much of the smut on the filtering cloth. When the dripping ceases, the liquid in the pail is again poured upon the seed and it is again washed. After it is drained, it may be spread upon the barn-floor and dried with a few handfuls of dry lime.

METHOD OF PICKLING GRAIN.

Annual Growth of Trees.—Mr. N. S. Britton, of Staten Island, in experiments with 22 species of trees, finds the White Willow the most rapid grower, with Apple, Norway Spruce, Ailanthus, Catalpa and Cherry next in the order given.

The Am. Pomological Society.—Fruit-growers should remember that this is the bearing year of this Society, and that the harvest will be gathered at Rochester, N. Y., this month, the 17th to 20th. This Society is perfectly free from anything like exclusiveness, and welcomes to its membership all who are interested in fruits, whether they be large cultivators, small cultivators, or no cultivators at all. We especially wish to encourage amateurs and beginners in fruit knowledge to become members, as we are sure that, aside from the value of the regular proceedings, they will find great benefit from meeting and conferring with others engaged in the same pursuits. Besides, a Society like this needs a constant accession of new members—of young blood, to keep up its life and maintain its usefulness. Let no one hold himself aloof because he feels that his operations are too small for him to rank himself as a Pomologist. The biennial fee is $4—and that entitles one to the volume of Transactions, which is well worth the money.

A Persistent Weed.—In 1865, Solon Robinson brought us a specimen of the "Bladder Campion" (*Silene inflata*), with the information that it was spreading rapidly in Westchester Co., N. Y., and promised to become a great pest. We at the time gave an engraving of the plant (see Sept. 1865, p. 277,) that it might be recognized, and warned farmers against it. Recently, a friend from the same County brought us a specimen to name, and from his account we find that it has fully met its early promise of mischief; it has taken possession of his lawn, and is establishing itself in cultivated grounds. Its root is large, and runs down for several feet, making it almost impossible to grub it up. Whatever else may be done, let it, wherever it appears, be prevented from seeding. It has opposite, pointed leaves, and a cluster of small, white, pink-like flowers, the calyx to which becomes bladdery or inflated; this, which is its distinguishing character, is shown in the engraving here given of a few flowers somewhat smaller than the natural size.

FLOWERS OF "BLADDER CAMPION."

Oranges and Lemons.—The reports show that for the fiscal year ending with June last the Oranges and Lemons brought into the port of New York had a money value of over $2,000,800, and paid a duty of about $560,000. The duty upon these fruits is 20 per cent, which is sufficient to give the growers in Florida and the other Gulf States, as well as in Southern California, great encouragement. The American grower of these fruits has not only this duty in his favor, but another agent that no change in the tariff can affect. Of the Oranges imported, about 36 per cent, and of the Lemons, about 20 per cent, were lost by decay during the voyage from foreign ports. The cultivation of these fruits in Florida has been much retarded by the foolishly extravagant accounts of land speculators. It is now becoming established as a regular industry, and those who went to Florida, supposing that Oranges and Lemons could be grown without labor, are giving way to those who are willing to work and wait. Under the more healthful conditions which the culture has assumed, we look for a large increase of these fruits from Florida and other Gulf States.

The Tomato has been the most unfortunate of all our vegetables. Those familiar with its early history can recollect that it had only fairly become popular when it was accused of various medicinal properties. The innocent fruit was charged with acting upon the liver like Calomel, and some chap produced a quack medicine, "Tomato Pills," which, to the credit of the people be it said, soon died a natural death. After the nonsense about its medicinal qualities had died out, and the tomato became a generally acceptable article of food, one Dio Lewis, who every now and then turns up in a new phase, discovered that tomatoes were injurious to the teeth. This is not so singular as that sensible people were found to believe it, and forego the use of tomatoes. The only way in which tomatoes can injure the teeth is by the action of the acid they contain during the process of eating them. Teeth that will stand uninjured the ordinary use of vinegar, lemons, rhubarb, gooseberries, and other sour fruits, have nothing to apprehend from tomatoes. Celery is likely to be the next victim of these remarkable physiologists—we believe they call themselves hygienists; or by some such name. It has already reached the first stage, and has been accused of being medicinal—to cure something, we have forgotten what. Soon it will be discovered to have some very bad quality; yet in spite of these remarkable reformers, the world will go on and eat tomatoes, celery, or whatever else is good.

Sowing Oats with Winter Wheat.—Some farmers, whose land is exposed to sweeping winds, have tried the sowing of one bushel of oats with their winter grain as a protection to that against the excessive cold and exposure. The oats grow up much more rapidly than the wheat and help to shade and protect it. When killing frosts occur, the oats perish, but in falling, still cover the wheat with their mantle of straw, and the protection remains through the winter, sheltering the wheat-roots. The little that is drawn from the soil by the oats is returned to it by their decay, and the benefit to the wheat is apparent when growth begins in the spring.

The Early Peach "Waterloo."—Last year we gave an engraving of the "Waterloo" peach, from specimens grown upon the original tree in Seneca Co., N. Y., and picked July 19th. Messrs. Ellwanger & Barry, Rochester, N. Y., sent us specimens this year, on August 1st, but the mail did not deliver them until the 5th. At least a day must have been required to get them from Waterloo to Rochester, and the fruit was evidently six days from the tree when we received it; it shows, as we noticed last year, remarkable keeping qualities. Even August 1st is very early for any peach to ripen so far north, and the sending of the specimens when they might have been withheld, shows that Messrs. E. & B. are willing to have the fruit seen at its worst, as well as at its best. Messrs. Ellwanger & Barry, write, Aug. 1st: "We send you by mail to-day, specimens of the 'Waterloo' peach. The fruit is not quite so large as it was last season, owing to the tree being overloaded. It has also ripened about ten days later than last year. We find this to be the case with all the very early peaches that we have seen thus far. Mr. Davidson's (of Painesville, Ohio), seedling, sent us last summer, was ripe July 9th, and measured 7 inches in circumference. This year, those sent, arrived on the 29th of July, were not yet entirely ripe, and measured 6¼ inches in circumference, showing a marked difference in size and time of ripening as compared with last year. 'Cumberland' and 'Musser,' received from H. M. Engle & Son, Marietta, Pa., July 26th, measured 6¼ and 6½ inches in circumference. We think there is no doubt that the 'Waterloo' is the largest of the very early peaches. We hope soon to have trees of our own in bearing, when we can give them the necessary attention. The original tree in Mr. Lisk's garden, where these specimens were grown, has no chance to ripen its fruit early—besides, far too many specimens were allowed to remain upon the tree which is yet quite young. It should be added that the tree was cut back severely last August, in order to obtain every bud possible for propagation. This is, we think, one reason why the fruit is smaller and later than usual."

Frog Farming.—A Mr. Soule, of Elgin, Ill., is in his third year of frog farming, and his first crop is now being marketed. He has an acre and a quarter devoted to the frog industry. The kind grown is the "Goslin frog," much larger than the common sort. Mr. S. will, next season, furnish St. Louis, Chicago, and Cincinnati, with frogs, and is confident of success in the business.

Sending Insects by Mail.—We must again remind our friends that a large share of the insects sent us arrive in a perfectly useless state, from being put into paper boxes which are almost certain to be crushed in the mail. Boxes of wood or of tin are not difficult to procure, and these bring their contents in safety. If boxes can not be had, old fruit or tomato cans are always procurable. Heat these until the solder melts, knock out the ends, and straighten out the piece that forms the body of the can. These cans are of very thin tin, that may be easily cut with a pair of strong sheats. Cut out a piece like fig. 1, according to the size of the box; cut out the corners as shown by the dotted lines; now turn up the sides, and you will have a box or tray, as in fig. 2. Make a similar one, just a trifle larger, the sides of which are not to be so deep, for a cover. This will form a box that will go in the mails for a long distance with safety. A block of wood with a hole bored in it, with a plug or cork to close the hole, answers well for a single insect, or several small ones.

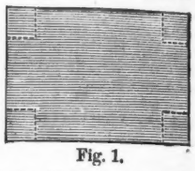


Fig. 1.

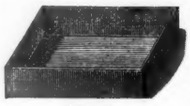


Fig. 2.

Corn Smut.—"H. F. L.," Sauk City, Wis., sends us a box of "diseased corn," for a name and a remedy. The trouble is caused by a parasitic fungus, *Ustilago Maydis*, commonly called "Corn Smut." This fungus usually attacks the ear, changing the grain to a swollen mass, filled with a dark, brown, dusty powder; but sometimes, as in the present case, it also appears upon the leaves, "tassel," and joints of the stalk. The only remedy is to cut off all affected parts, whenever and wherever they appear, and burn them, thus destroying the spores. Cattle should not be allowed to eat the corn fodder affected by the smut, as, in considerable quantities, it has been known to produce serious diseases.

American Horses in France.—A small shipment of American horses from Richmond, Ind., arrived in Havre a short time ago, and were at once accepted for the French Cavalry, at two hundred and twenty to two hundred and sixty-five dollars per head, the highest price paid for remounts. The demand for horses in the French Cavalry service, as well as for other purposes, together with the perfect success of this first shipment, teaches us that we have here another valuable item of export, and the sooner our people know it, the better. At the figures given, we can successfully compete with Germany, Russia, or any other country, and our Western horse raisers would do well to make a note to this effect.

Salt on Melons.—"D. C. M.," Trenton, Ont. So little is positively known about the action of salt as a fertilizer, except upon grain crops, that you will have to experiment for yourself as to its effects upon melons upon your soil. We shall be glad to learn the result.

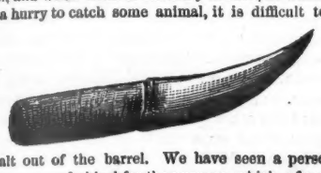
High and Low Priced Wools.—From Manger & Avery's monthly circular, July 15, we notice that the only class of wools for which there has been a steady demand at firm prices, is that known as Territory wools. These wools, grown chiefly on the plains, run from 15 to 25 cents per pound; while Ohio x, to xxx, sell for 36 to 42 cents. The difference in cost is greatly in favor of the cheap wools, to say nothing of their ready salability. After all, there may be the most money in cheap goods, and this is a point to be studied in all its bearings.

The Largest Fleece of Wool.—"O. E. P.," N. Y. The largest fleece of wool ever shown, is undoubtedly that cut in California about 5 years ago, and which weighed 52 lbs. This fleece, however, was supposed to be the growth of two years, and had a large proportion of dust and yolk in it. Fleeces of 34 or 36 lbs., are not uncommon among aged Merino rams, but of this four-fifths or five-sixths, usually consists of grease and yolk.

Hen Roosts.—It is a mistake to place the poles at different hights, rising from the front, because all will strive to get upon the highest one, and the weaker fowls are crowded off, and frequently fall to the ground only to repeat the process, or, if injured, remain upon the ground through the night. Place all the poles at the same elevation, and have a separate ladder for each. Do not have the poles and ladder combined, for the last pole will then be *the* roost, or the birds will think so at any rate.

The Wheat Weevil.—This little pest is not, as many suppose, brought in from the field, but works upon the grain after it is stored. In its perfect state it is a little beetle, one-eighth of an inch long, and has great powers of multiplication—a single beetle is said to produce 6,000 eggs. The eggs are deposited on the housed grain, and, soon hatching, the grub eats at once into the interior of the grain, and in time leaves only an empty hull. Fumigating the granary with sulphur is a remedy; the sprinkling of air-slaked lime has been recommended. If the granary is badly infested, it is better to change the place of storage for a year or two, and starve them out.

A Handy Thing for the Salt Barrel.—It is often the case that the salt will become very hard in the barrel, and when some is suddenly needed, as when one is in a hurry to catch some animal, it is difficult to get



the salt out of the barrel. We have seen a person in haste use a good chisel for the purpose, which, of course, was damaged by the salt adhering, and causing rust. Horn does not corrode or rust, and the sharp point and hardness render the horn of a cow or young steer specially adapted for use as a salt loosener. A handle of wood can be fitted into the hollow of the horn, as shown in the engraving. The crook is not at all objectionable, as the point can be pushed to one side all the better.

Worms in Swine.—"V. S. R.," Tchefuncta River, La. Worms in the intestines of swine often cause weakness of the loins and partial paralysis of the hind limbs. This is due to a loss of force of the lumbar system of nerves, proceeding from the lower part of the spine, and may be caused by disease of the spine, rheumatism, disorder of the kidneys, indigestion, and parasites in the muscles of the loins or in the bowels. It is almost impossible to indicate the cause until after death, when, if more in the herd are affected, they may be treated as may be found advisable. Turpentine applied to the loins, or given internally, acts favorably in nearly all the above complaints, and is, so far as known, the best remedy, if used in ounce doses, daily.

To Repair a Flat Roof.—"G. L.," Machias, Me. Flat, leaky, shingle roofs have been well repaired by using hot tar in which hydraulic cement has been mixed, until it is as thick as can be spread. When it is spread, sift more dry cement over it until a person can walk over it without its sticking to his feet. The tar prevents the cracking of the cement, while that in turn prevents the tar from running. If it is well worked under the shingles, and the cracks are well filled, a good water-proof roof may be made with little expense.

Our Railroads.—The net and gross earnings of the railroads of the country for the past eight years exhibit features of interest to every one, and we give them, together with the miles in operation each year:

Year.	*Miles operated.*	*Gross earnings.*	*Net earnings.*
1871	44,614	403 millions	141 millions.
1872	57,373	465 "	166 "
1873	66,237	526 "	184 "
1874	69,273	520 "	189 "
1875	71,739	503 "	185 "
1876	73,508	497 "	186 "
1877	74,112	473 "	176 "
1878	78,960	490 "	187 "

The greatest gross earnings were in 1873, but the greatest net earnings were the next year. The number of miles has nearly doubled in the eight years, and will be fully double in 1880 at the close of the decade.

Ground Bone vs. Superphosphate.—"W. H. B." asks, why it is not as well to use Ground Bone as Superphosphate, supposing there are the same essential elements present in both, and in the same amount.—In the crude bone the Phosphoric Acid is not in so available a form as in the Superphosphate. The plant can not take it up so rapidly because in an insoluble state, while with the Superphosphate the plant takes it up easily. The bone is a slow fertilizer, while the Superphosphate, on the other hand, gives quick returns for the money—an important thing in a fertilizer. The finer the bone is ground the quicker will be its effect upon the crop. The effects of coarse ground bone are seen on the land for several years after its application When the bones are treated with Sulphuric Acid, and the Phosphoric Acid rendered soluble, the first crop gets most of the benefit.

The Potato Disease.—The (London) "Gardeners' Chronicle" for July 26th, speaks in desponding terms of the Potato Rot. With the excessive moisture of the previous few days, the fungus has developed rapidly. In France the potato crop is already greatly injured, and other European countries are suffering. The "Chronicle" says, "A summer without fruit, a spoilt hay crop, the potatoes rotten, and possibly a wet harvest, are events that will hardly help England through her present trade and commercial embarrassment."—We may look for the Potato Rot in this country after excessive rains, but happily no signs of it as yet have come to our notice.

The Silk Crop.—There is an almost entire failure of the silk crop in Italy and France, and the raw article has advanced rapidly in market value. Silk goods will be necessarily high for some time to come. This encourages the establishing the culture of silk in the United States, many parts of which are well adapted to this industry, the chief difficulty being the cost of labor.

Value of Foods.—The value of foods for stock is not to be measured by the market price per ton, but by that as compared with the actual nutritious value. Thus, cotton-seed meal, containing 13 per cent of oil and 30 or 40 per cent of nitrogenous or flesh-forming matters, and which sells for $25 or $26 per ton, is evidently a cheaper food than corn meal, which has 5 or 6 per cent of oil and 10 per cent of flesh-formers, but which sells for $23 per ton. In selecting a food, this point of actual feeding value should not be overlooked; at the same time, the digestibility of the food and its effect upon the system should not be neglected. In general, the healthfulness of an animal is best secured by a mixed ration, such as bran, corn-meal, and cotton-seed meal, in proper proportions, and in making up the proportionate rations, this should be done in reference to the feeding and money values of the different substances.

Was it Pleuro-Pneumonia?—"J. C. S.," Pendleton, S. C., writes: "Did our cows have Pleuro-Pneumonia or not? In February last, we imported seven head of young Jersey cattle, and about June first we noticed following symptoms: First, a cough with the back bowed slightly, then a running of a yellow watery substance from both the nose and eyes, which thickened daily. When the cows were well stricken with the disease, they had little inclination to eat or move about." This may have been a case of either Pleuro-Pneumonia or of Bronchitis, as the symptoms belong to both. The most marked symtom of the former, is the condition of the lung which becomes solidified (*hepatized*), as the disease progresses, and this is discovered by the dullness in place of the usual resonance of the chest when it is struck by the closed, gathered ends of the fingers. We should say that the disease was Bronchitis, caused by the warm weather, in animals accustomed to a cool climate.

Warts.—"M. S. G.," Morristown, N. J. Warts are excrescences growing from the skin into which nerves and veins sometimes penetrate, and they then become vascular and sensitive. The cause cannot be satisfactorily given, but in many animals, they are constitutional and seem to accompany a scrofulous condition in which there are deposits of abnormal matter in the bones and in the cellular tissue and the skin. The only remedy is to destroy the warts by caustics, when they are flat, and by tying a waxed thread or a wire ligature tightly around the base when they are long. Unless they cause trouble or inconvenience, they are best let alone. If they are to be removed, this should be done when they are small.

Another Good Cow.—"B. J. F.," Wallingford, Conn., reports a 3-year-old Jersey cow owned by Mr. Malley, of New Haven, as giving three times her own weight of milk in June last, and a yield of 58 lbs. of butter from the month's milking. This is a valuable cow.

Twenty Years in the Price of Corn.—In 1859 corn was worth 70 cents a bushel; and the price did not vary much until 1864, when it went up to $1.10, followed by the remarkably high price of $1.75 the next year (1865). A fall to 85 cents came the next year, and a rise to $1.10 during the two succeeding years (1867-'68). Since this time there has been a gradual fall to 40 cents, the price for last year. In 1875 there was an exception in a *rise* of 10 cents (85), followed by a fall of 25 cents (60) for the next year. It is to be seen that during all the 20 years corn was never so low as at the present time.

Plans of Lime Kilns.—"R. W. S.," Manatawny, Pa. Plans for lime kilns were given in the *American Agriculturist* for February, 1875, and September, 1871.

Honey Dew was in olden times supposed to be the tears of the gods, but at present it is better understood, and not considered of celestial origin. In many cases, if not in all, it is due to small plant-lice, (*Aphides*), which feed upon the plants, and exude from their bodies this sweet, clear semi-liquid, which glistens in the sun like dew-drops, and falls to the ground in little patches. This dew is often gathered by bees and made into honey—a honey which is the work of two distinct insects.

Weights of Hay in Stack.—"E. A.," Jefferson Co. Hay in bulk varies in weight in proportion to its kind, condition of ripeness, and its compactness. Clover, Red-top and light meadow hay, cut when nearly ripe and put up in stacks of 4 or 5 tons, will measure 700 cubic feet for a ton. Timothy of similar character and condition will measure 500 feet to a ton. Half Timothy and half Clover will measure about 600 feet. Dead-ripe common meadow hay will measure 900 feet for a ton very frequently; this kind is very uncertain and is of so little value that it does not matter much how large a quantity goes to a ton. Much depends upon the compactness.

Weaning Calves.—"W. L.," Farmington, Ill. The practice that calves sometimes have of sucking each other or of sucking cows, may be prevented and in time cured, by using the Calf-Weaner here illustrated. The device is old and has been found effective, but there has

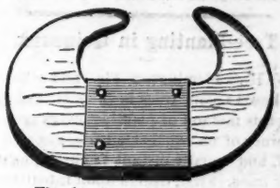


Fig. 1.—CALF JEWEL OPEN.

heretofore been a difficulty in fixing it upon the nose of the calf. This is now avoided by the invention of Mr. Rice, in which the points of attachment can be opened

Fig. 2.—CALF JEWEL CLOSED.

to fix the Weaner on the nose, and then closed to fasten it. The engravings, figs. 1 and 2, show it in both positions.

Balancing a Burr-Stone.—"E. T.," Cal. If a burr-stone is truly centered and balanced on the spindle, the spindle is perfectly upright in every direction. If the spider is set in true and the stone truly faced, it will preserve a running balance when at work. But to do all this, includes a large part of the practical education of a miller, and how to do it cannot be so told that an inexperienced person can succeed. Milling is a business that requires a great amount of practical knowledge of details, such as this, and which can only be learned in the mill.

A Grain Drill for Cultivating Wheat.—"G. E. S.," Licking Co., Ohio. Mr. Brandon, the inventor of the Wheat Hoe, to which we have often referred, at first combined his Hoe with a wheat drill, but soon after abandoned this arrangement, probably for good reasons. As a wheat hoe can be very cheaply made, it is probably better not to hamper the drill with the attachments, but procure a separate implement. From our repeated tests we are led to strongly recommend some carefully made experiments in cultivating wheat. The practice will, in all probability, eventually become general.

Bearded Straw and Chaff Injurious to Cattle.—"R. L. H.," Waverley, Va. When horses, cattle, or sheep, consume straw or chaff of bearded grain, they are apt to suffer from the penetration of the coats of the stomach by the sharp *awns* or beard. Sheep and cattle have died in consequence of the walls of the rumen being completely filled with masses of rye or wheat beards. As the chaff is largely mixed with broken beards, this is as injurious as the straw. There is no objection to it for use as litter. Many separate the beards in threshing.

American Devon Herd Book.—The 5th vol. of the American Devon Herd Book, published in July, 1879, contains 825 pedigrees, 273 of these are of bulls, and 552 of cows; this volume is sent to applicants by the editor, H. M. Sessions, Hamden, Mass., for $2.00. The 6th vol. will be published as soon as one thousand entries have been sent in. Acceptable pedigrees sent to Mr. Sessions, with a fee of 50 cents, will be received and filed for record in the next volume of the Herd Book.

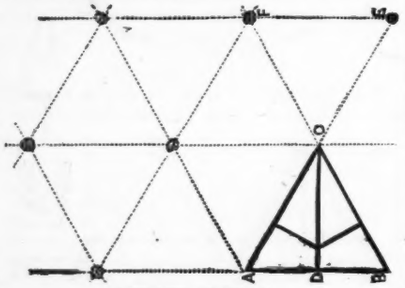
Exposure on the Farm.—We can remember when in the harvest or hay field, we worked until the rain came, and then started for some tree, only to be exposed to the danger of lightning, and what was still more dangerous, (though we did not think so at the time), the beating rain upon the thinly clad back. The shower being over, we would continue our work, in the wet clothes, it might be in the barn if the shower was a long one, but at any rate, it was thought safe to "let the clothes dry on the back, as there was less danger of taking cold." This is all wrong. When the clothing is soaked with rain, change it as soon as possible, and never wear it for hours with the false idea, that the practice is harmless. There is too much of this needless exposure upon the farm, which tells in time upon the human frame, inducing rheumatism, and other afflictions. Farmers need to be all the more careful, as the opportunity for undue exposure, is frequently presented in their occupation.

Colored Glass and Evaporation of Water.—M. Baudrimont, communicates the result of some experiments to the French Academy, which show that the sun's rays, after passing through green or red colored glass, lose much of their power to evaporate water. Of all the colors, yellow diminishes this power the least.

(*Basket Items continued on page* 359.)

Tree-Planting in Quincunx.

"R. W. H.," Flemington, Fla., and others, wish to know how to plant trees in the style called *Quincunx*. By this method of planting, every tree stands at the corner of an equal-sided triangle, and in the center of, and equally distant from, six other surrounding trees. First, decide upon the distance for the trees; if 30 feet, then make an equal-sided triangular frame of light stuff, with the sides as long as the distance between the trees. The frame may be braced by cross-pieces as shown in the engraving. Having decided where the first row shall be, place the frame at one end of the row so that *A* and *B* will fall upon it, and they will designate the places for the first and second trees. Set stakes at these points. The first tree in the second row will be at *C*, which also requires a stake. The line *C D*



QUINCUNX PLANTING.

which passes from the angle *C* to the middle of the opposite side of the frame *A B*, is the distance between the rows. Go to the other end of the rows, and with an ordinary pole, determine the position of the rows and set stakes, then you are ready to return and lay off the places on the rows and set stakes for all the trees. The triangular frame is no longer needed, as the position of *E* and *F* can be obtained by measuring off the distance between the trees on the lines with *A C* and *B C*, and the position of the trees can be laid off as before. If the measurements are exact in the beginning, and made with due care throughout, there will be no trouble in getting all the stakes to "line" in the various directions which this system gives. The advantage of the system is that it gives a more uniform space on all sides of the tree, as it is surrounded by a *circle* of trees, seen in the engraving, instead of a *square*.

The Dutch-Friesian Herd-Book.—When the Dutch cattle imported from North Holland, first became noted in this country, they were wrongly termed "Holstein" cattle, and in due time a Herd Book was established for recording them and their progeny. After some years, the absurdity of giving to a race of cattle, a name to which they were in no way entitled, and which the *American Agriculturist* has ever protested against, became apparent. A new name has therefore been conferred upon the breed, and a second Herd Record is in progress. The name now adopted is Dutch-Friesian, by which is meant cattle from North Holland and Friesland; but as both these localities are Dutch, the compound name would seem to be unnecessary, and Dutch would sufficiently identify them. But the main point in the new Herd Book is one of its rules, by which all animals are excluded which have not come up to a satisfactory standard as regards milk production, viz., a yield of at least 6,000 lbs. in 12 months from calving for a 2½-year-old cow, and 9,000 for a 4½-year-old, etc. This, it must be confessed, is a step in the right direction, and if a similar rule had been made in the "Am. Jersey Cattle Club Register," we should not have been amazed to see the editor of that book cautioning the public against purchasing any one of "car loads of worthless brutes," which, having the certificate of entry in that Record, are supposed, by innocent purchasers at least, to be animals of some value. But it is something, however, to know that even a registered Jersey may be a worthless brute.

Editorial Correspondence.—Items from Notes by the Way.

[Though his original programme of travel was partially interrupted, and materially changed, by temporary illness, Mr. Judd continued his journeyings for nearly two months, gathering information, and making a great variety of notes, which will be drawn upon from time to time, though not in regular order.—EDS.]

The Corn Crop of 1879, and Its Uses.

On Lake Erie, August 4th.—Beginning in 1850, twenty-nine years ago, I have made very frequent journeys Westward, as the settlements have advanced, and now feel pretty well acquainted with the entire country between the Atlantic and the Rocky Mountains—at least, as far south as Tennessee, Missouri, and Kansas. I have also been down and up the Mississippi River, between St. Paul and New Orleans, and down the Atlantic Coast to Florida, and back through Georgia, Tennessee, Virginia, etc. In all these past journeyings, I have witnessed nothing more gratifying than the appearance of the growing CORN, as I have seen it during the past seven weeks, particularly in Ohio, Indiana, Illinois, Iowa, Nebraska, Minnesota, Wisconsin, and Michigan. It is simply magnificent, taken as a whole, with, of course, a few local exceptions,—and they are very few so far as I have observed, or been able to hear of. The late opening of spring caused well grounded fears, but they have not been realized. If early frosts do not come to blast the later ripening fields, the corn crop of 1879, taking into account the increased area as well as the present condition, must largely exceed that of any and every former year.—One is tempted to ask, "What will we do with it all?"—Probably such a crop could not all have been used in *any* former year. Not so now. While corn has come into greatly increased use abroad—it will be more in demand this year than ever before—and many millions of bushels will cross the Atlantic in the kernel, it will go far more largely in the form of beef, pork, lard, and butter also. The demand for these is almost unlimited. The only question in my mind is, are there animals enough now growing to manufacture this surplus corn into the concentrated products. A 300-lb. porker is a condensation of 1,800 to 2,000 lbs. of corn (32 to 36 bushels). In other words, we can concentrate the product of an acre of corn into one 300-lb. barrel of pork, and in this form it is easily and cheaply freighted 4,000 or 5,000 miles to reach the European consumer. As freight, especially by water, is usually charged by bulk rather than by weight, the 32 to 36 bushels of corn goes in *one* barrel in the form of pork, while in the form of shelled corn *ten* to *twelve* barrels space would be needed. The above applies also to feeding corn to fattening cattle, and to butter producing cows.

The Wheat Crop of 1879.

Chicago, July 25.—Fifteen years ago there were no general, systematic, reliable reports upon the condition, area, or yield, of the leading crops, but the producers were always in doubt, and at the mercy of speculators for a rise or depression in prices, who industriously circulated favorable or unfavorable rumors as best suited their desires or necessities. The *American Agriculturist* undertook to supply the general lack of correct information. Over **1,500** reliable, special correspondents were selected in different parts of the country to report, at a given date each month, the comparative area and the condition of wheat, corn, etc., by a system of percentages. Thousands of dollars were expended, and the enterprise grew so large and important that a proposition was accepted to turn the whole work, forms, blanks, list of correspondents, etc., over to the Agricultural Department at Washington—where it has since been carried on with a varying degree of accuracy and value. [This Journal has never received its proper or due credit for starting the enterprise]. At the present time, not only the State governments, but a large number of enterprising Journals are gathering widely extended and quite accurate accounts of the actual condition and yield, especially of the wheat crop. The result of the Wheat Harvest of 1879 will be known with much accuracy before these notes can reach our readers. I will therefore say in brief, that having just completed a careful examination of the wheat fields of representative portions of Minnesota and Wisconsin, and previously of Illinois, Iowa, and Nebraska, and conversed with many trustworthy growers from other sections, I estimate the crop of this year, taken on a whole, in the States named, with Ohio and Michigan, as just about a good average yield per acre. But the area is largely increased, and the TOTAL YIELD *in the whole country will be considerably above the average in the past.* I have seen many splendid fields, and I have also noticed many thin ones. I have seen the chinch bug sucking the juices from the not quite mature crop in some places, and in others there were only the remnants of stalks on some thousands of acres which the grasshoppers had passed over. These last were happily confined to a very few localities, and the chinch bug ravages were not widely extended. The large crop would have reduced prices to a very low figure, but the generally poor crops in Europe will make a sufficient market to maintain fair, not very high, rates for all we shall have to dispose of.

What Railroads are Doing for Farmers.

Lake Kampeska, Dakota, July 18th, 1879.—We are here, 631 miles west-northwest from Chicago, the present terminus of one of the numerous lines of the Chicago and Northwestern Railroad Company. Diverging at Tracy, 96 miles east of here, this Company is building a long stretch of railroad towards, and intended to reach, the Black Hills region in Western Dakota. Other companies are also pushing forward, and extending their tracks towards the same region, and Southern Dakota with Northern Nebraska, will derive great benefit from them. The cars have only recently run to Watertown, just east of Lake Kampeska. The country is a good deal settled as far as Marshall, Minn., 75 miles east of this, and new settlements are scattered all along westward, but there are millions of acres waiting occupants, which have not been in the market hitherto. All over Nebraska new extensions of the Burlington and Missouri and the Union Pacific Railroads are now being rapidly built, each mile of which will bring thousands of acres of fertile land within the easy reach of markets. At the far Northwest, toward the Red River, Lake Winnipeg, Manitoba, etc., the extension of the railroads is opening up a wonderful wheat region, as stated by our Associate, who visited that region last autumn. But I began this item to speak of

The Great Trunk-Line Railroads.

Open any good, recent map of the United States, especially one of a Railroad Guide, and notice the wonderful net-work of iron tracks that cover the whole country between the Atlantic and the Missouri River. Through this net-work will be seen several leading, continuous roads, beginning with the Grand Trunk in Canada, the N. Y. Central, the Erie, the Pennsylvania Central, the Baltimore and Ohio, and the nearly completed Chesapeake and Ohio. There has been a fierce competition between

these several through lines for business, and millions of tons of Western produce and live stock have probably been carried to the seaboard at less than the actual cost of hauling, to say nothing of wear and tear of rolling stock and road-bed. This low freighting, while temporarily injurious to the stockholder, has been of very great importance to the farming interests of the whole country, because it has resulted in introducing our products to European markets at prices below the current rates, and even below cost of production there. The beef raised in the Mississippi Valley States has been laid down in London, in a fresh state, so low that it broke down among the masses the prejudice in favor of "English beef." It has stimulated the invention of new processes of shipping fresh meat, and the trade thus opened will go on, supplying an outlet for the agricultural products of our vast country, now increasing in such a rapid ratio. It is no wonder that under the present circumstances

English Farmers are Troubled,

as well as the great landholders, whose $5 to $10 per acre rental can no longer be paid by their tenants. The system of agriculture all over Great Britain and in many other parts of Western Europe will necessarily be changed. Lower rents, and the division of lands into smaller holdings, will be the result, while a greatly increased emigration to this country will be stimulated. English tenant farmers are now paying about (Three Hundred and Thirty Million Dollars,)

$330,000,000 Rent Every Year,

on the land they cultivate. This would annually purchase 33 million acres of our good land at $10 per acre. It would pay for transporting an equivalent of 660 million bushels of wheat, at the high rate of half a dollar per bushel, from our western fields to the other side of the Atlantic, or nearly double the actual cost of freightage. But the English farms will not, of course, lie idle, and the terms of rent and the price of land will of necessity be reduced to so low a rate that the cultivators can compete with our cheaper products. The loss will, therefore, in the end fall largely upon the present land owners, and five to ten shillings per acre is likely to be the rental in the near future, instead of the $5 to $10 per acre now paid for good land. This will, however, be partly offset by a change to crops requiring more of their cheap manual labor, leaving wheat and meat to be supplied by American producers.

Buying a Farm with One Crop.

It is stated in several papers that a farmer in Marion County, Iowa, last year offered his farm for sale at $20 per acre. Failing to sell; he put in a large crop of wheat, which at present prices will bring him $31.45 per acre. This is easy to believe, for I have met in my travels a number of farmers who purchased railroad lands, and from other parties, at $6 to $10 per acre, and sold the first crop of wheat for enough to pay for the land, the breaking, and all expenses of raising and harvesting, with a surplus left. If I was out of business, with a cash capital of $5,000, $10,000, $20,000, or $50,000, or more, I should, as the most certain and profitable investment of it, buy a large tract of good land, such as is still for sale under $10 an acre in Southern and Western Iowa, Eastern Nebraska, and Western Minnesota—reserving enough cash either to stock the land with cattle and raise a good corn crop to fatten them with, or, if in the more northern regions, to break the ground, get it into wheat, and harvest it. If the amount of cash capital was too small to buy plenty of land, I would pay for part of it, and take the rest on a two to four years' credit, keeping enough ready money to stock and work the land for a year or two.

One Illustration.

In going west from St. Peter, Minn., I fell in with Mr. E. S. Youmans, brother of Prof. E. L. Youmans. He is carrying on a large business in lumber, etc., at Winona. His son having received a good education, on coming of age expressed a preference for farming as a business. Mr. Y. bought three sections of land at Marshall, Minn., paying the R. R. Co. over $14,000 cash for it, I believe. At the time of our visit, his son had 640 acres in wheat, just ready for the reaper, which, at 85 cents per bushel, will pay all expenses of the crop, the cost of the land, and probably a good rate of interest on the cost of the other two sections. Plenty of similar illustrations could be given. I met them in Eastern Nebraska for over a hundred miles west of the Missouri River, along the Union Pacific R. R., north of the Platte, and along the Burlington and Missouri R. R., south of the Platte, and elsewhere.

The "Telegraph" Water Carrier.

A method of bringing water from a distance, by means of a wire stretched between poles is termed the "Telegraph Carrier." An account of this was given several years ago, but some recent inquiries induce us to present the method employed at present. This method of carrying water may be found convenient when there is a spring at a considerable distance from the house, and at such a depth below it, that a pump cannot be used. Water may be brought by the "Telegraph" for a distance of several hundred feet, and up an incline of 50 or even 100 feet if necessary. The roadway, shown in figure 1, is constructed of poles set in the ground, but it may be attached to a post-and-rail, or even a board fence, if convenient, and fence boards or strips may be used in place of wires. The carriageway is supported on arms as shown at figure 2, and is made to carry a wheel, deeply grooved, seen at figure 3. The bucket is affixed to this wheel by a crooked arm, so bent as to throw the center of gravity directly under the track and wheel. A cord is fastened to the handle of the bucket by which it is let down or drawn up; the cord may be wound upon a winch, shown at figure 4, after passing over

Fig. 1.—THE ROADWAY.

a pulley suspended from the first arm. When the spring is reached, the wire, or roadway, is carried down to a stake at the edge of the water; this causes the bucket to tip as it strikes the water and become filled, when it may be drawn up by the winch.

Feeding Calves and Yearlings.

The spring calves that have been weaned and turned to grass, will begin to suffer from short rations, unless some extra food be provided for them. It is poor management to permit calves to fall off in condition, or even to stop growing at this season. The pastures are usually dry, and the herbage innutritious, and there is danger not only of a falling off in condition, but the contraction of disease from disordered digestion, consequent upon the filling of the stomach with indigestible matter. The most forward calves are the most subject to this danger, and become the first victims to neglect. This is the chief cause of "Black-leg" or "Black Quarter," (carbuncular erysipelas), which carries off many calves in the fall and spring. If some green fodder cannot be spared for the calves, some supplementary food may be provided for them. A mixture of wheat middlings and linseed meal, and cotton-seed meal, in equal parts, may be given in small quantities twice a day, beginning with two

Fig. 2.—A POST WITH ARM.

ounces at a meal, and increasing up to twice as much. This quantity may be given with benefit to a three to six months' old calf, and twice as much to a yearling. An ample supply of fresh water is necessary, and occasional small doses of salt, will usually promote a healthful digestion.

Roots and "Yarbs".—In the Mountains of North Carolina.

BY PROF. ASA GRAY.

[The following extracts from a letter from Prof. Gray to the Editor, will give some idea of a little known region, and a peculiar local industry. ED.]

As Agriculture embraces all practical herbaceous matters, I will call your attention to a branch of it—a small branch, you will say—which I had no idea of. It is the Root and Herb business as carried on in the mountain districts of Carolina. Our glorious botanical journey—which only wanted your companionship to make it perfect—took us to the headquarters of the business, and through the regions where most of the collecting is done, and we had at times the company of the two men who largely control it,—Hyams, of the firm of Wallace Brothers, of Statesville, and Cowles, of Gap Creek, whose father organized and developed the business in the first place. Being ourselves members of the herb-confraternity, we were received with enthusiasm, and shown all the operations. "*Sang*," *i, e*, Ginseng, the original foundation of the trade, has been collected ever since the earliest settlement of the country, and is by this time pretty well rooted out from the more accessible districts; but it is still brought in, and brings 75 or 80 cents a pound. When I was first in these mountains, between 35 and 40 years ago, this, and *Angelico*-root were the only things which were gathered for market. Now, the price-list which you will find posted at almost every road-side store, enumerates over two hundred articles. Some of them are cultivated things, such as Summer Savory, Southern-wood, Peony-flowers, Watermelon-seed, and leaves of the Poppy and Garden Lettuce. But most are of wild herbs, or the bark or berries of trees, or in some cases blossoms. Elder-flowers, for instance, are a prime article. The collecting is done by women and children—it could be done only by cheap labor—and the articles, when dried, taken to the country store, usually to the nearest County Seat, and exchanged for "store goods," very little money passing. Almost every day we would meet women on horseback, with a bundle of the more bulky herbs on the off side,

Fig. 3.

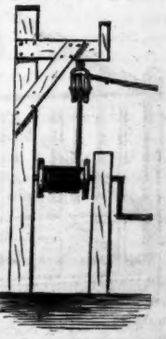


Fig. 4.—THE WINCH.

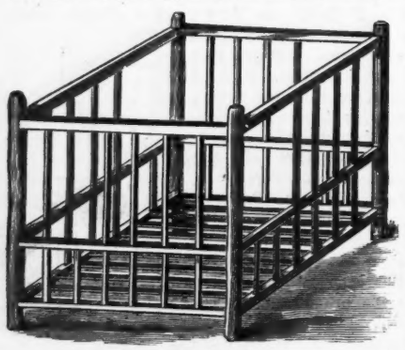
commonly wrapped in a sheet or blanket, and another on the pommel, and a basket in one hand. With the proceeds they buy most of the clothing that is not made at home (for, happily the wheel and the loom hold their place in almost every house), perhaps some sugar, and their small finery. But "tree-sugar" is made for home consumption, and serves for the coffee (tea is unknown, at one place, where our tea was pronounced "not bad to take," we were requested to tell them what they should call for if they ever got any at the store); and the best of honey abounds. In these mountains milk and honey literally flow without price. At least we could never get the people to fix any.

From the country stores the roots and herbs pass to the larger dealers, and from these only would you get any idea of the magnitude of the business. You should see the herb-warehouse of Mr. Cowles at Gap Creek, in Ashe County, and the much larger one at Statesville, of the enterprising Wallace Brothers, under the charge of Professor Hyams, three of whose sons are in the business at different points, and one of them in McDowell County, where he was the fortunate rediscover of the long-lost Shortia. Bales upon bales of roots and herbs, compacted by a powerful screw-press, accumulate in these warehouses, and pass on to northern cities and ports. What becomes of them? Some are standard articles of the Materia Medica, such as Mandrake-root, from which *Podophyllin* is made. One day, while we were present, an order came to one of these establishments for *ten tons* of Mandrake to go to France. The larger number of articles go into patent medicines. You may form some idea of the demand for this purpose from two orders just received, one for an unlimited amount of Liver-leaf (*Hepatica*), the other for two tons of Maidenhair (*Adiantum*). Consider what a quantity of these, in a dried state, would go to a ton!

And now, if I begin to tell you anything about Azaleas and Laurels—both Rhododendrons and Kalmia, there will be no end. We were just in the season for these in all their glory, having timed it accordingly. You may say there is no need to go to the mountains of North Carolina for these, but you will get new ideas if you do. Nowhere else can you see wooded hillsides of the richest green break out into flame with *Azalea calendulacea*, and nowhere but in Roan can you see some miles of grassy mountain-top all ruddy and rosy with *Rhododendron Catawbiense*. Now you can comfortably reach the top of Roan Mountain in 36 hours from New York, and be in mountain air all the way after leaving Lynchburg, and on the mountain be most comfortably and cheaply housed and fed, at the Cleveland Hotel, at an elevation a few hundred feet higher than the top of Mount Washington, and enjoy an air which is cool without bleakness, and views such as we have never elsewhere seen the like.

A Useful Fodder Rack.

The use of fodder racks in the barn-yard is often objected to, for the reason that, if they do not encourage, they give opportunities for the manifestation of the fighting propensities of the animals, which often produces confusion, and sometimes damage. To avoid this, the racks may be made as shown in the accompanying engraving. Rough, small timber may be used for these, or even short rails. A separate feeding place being provided for each animal, the herd may stand at the rack, in peace.



A GOOD FODDER RACK.

The "Walking-Stick," and its Depredations upon Forest-Trees.

In the *American Agriculturist* for June, 1877, we gave some account of the destructive work of one of the insects known as "Walking-stick," upon the forest-trees in Yates Co., N. Y. A very intelligent farmer, W. C. Snow, Esq., having given us his observations by letter, and in personal interview, we gave these in the number referred to, with an engraving of one of these insects, with a view to calling the attention of others to this remarkable enemy to our forests. We also advised Prof. C. V. Riley of the matter, and placed him in communication with Mr. Snow. When Prof. R. gave importance to the U. S. Department of Agriculture, by accepting the appointment as Entomologist, one of his earliest investigations was made in the forest of Mr. Snow, to which he made two visits. An account of his observations upon this insect will be found in his Report to the Dept. whenever that shall appear, but as Prof. R. has given us the chief points in advance of its publication, and a copy of the engraving prepared for the Report, we make such use of the materials as will supplement the account given in 1877. We may add here, as some may not have that volume, that this insect, known also as the "Stick Bug," belongs to the same family of insects as the Grasshoppers, Locusts, Katydids, etc., the *Orthoptera*, or straight-winged insects. This is always wingless. Its scientific name is *Diapheromera femorata*. The trees especially attacked were, first, the Black, Red, and Chestnut Oaks, and after these the White Oak and the Hickories. The work of the insect is first manifested just after the wheat harvest, and continues until September, when the trees are as completely stripped as if by fire. They are in such numbers as to make it unpleasant to enter the woods, and they cover underbrush, fences, etc., with their repulsive forms when they travel from one exhausted feeding ground to a new one. The insects appear in considerable numbers only on alternate years, and do their work so thoroughly that the portion of the forest infested by them is quite leafless, and is noticable from a long distance. The insects hatch in May, but at first are small, and being green they are not noticed; as they grow and change their skins, they become larger and of a brownish color until they attain the full size shown in the engraving, which shows not only the insects, but the manner in which they treat the leaves. At *a* and *b* the enlarged egg is shown in two positions; these are black and polished, with a white stripe, and look much like a seed of some plant of the Pea Family. At *c* are shown the young just hatching. Each female lays upwards of a hundred eggs, dropping them while she is upon the tree. At the proper season, when the insects are numerous, the falling of the eggs upon the dried leaves sounds like the pattering of rain. The eggs are concealed by the leaves, but are so numerous that they may be scraped up in quantities. The appearance of the insect in injurious numbers every other year is accounted for by the singular fact that the greater part of the eggs do not hatch until the second year. As the trees can not long survive these attacks, many in Mr. Snow's forest having died, it becomes an important matter, not only to the few who have suffered from their attacks, but to all interested in forestry, to check their further increase. As with other insects, when they become very numerous, their natural enemies will increase in proportion, but it is important to aid these by artificial means. The methods suggested by Prof. Riley are: to burn the dead leaves under which the eggs lie, or to dig or plow them under, according to circumstances; and to poison the young insects, as, when first hatched, they feed upon the foliage of the under-brush. He proposes, where it can be done without danger to domestic animals, to sprinkle the under-growth with Paris Green. The fact that they occupy a well defined area, renders both of these methods practicable.

THE "WALKING STICK" AND ITS WORK ON LEAVES.

Fig. 1.

A Simple Stump Puller.

Stumps of small size, larger ones that are half decayed, or even whole trees, may be torn out by the roots, by the use of simple appliances. These are a stout iron hook, a strong lever, a heavy chain, and a pair of horses or cattle, to be hitched to the chain. The hook, figure 1, is provided with a chain and ring, a sharp point, and a head by which it is driven into the stump, without battering it. It should be curved to fit the circumference of the stump or tree. A lever is passed through the ring, and the team is hitched in the usual way to the other end, as shown at figure 2. The method of operation is made plain by the above engraving.

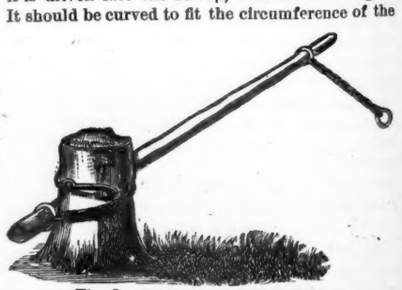
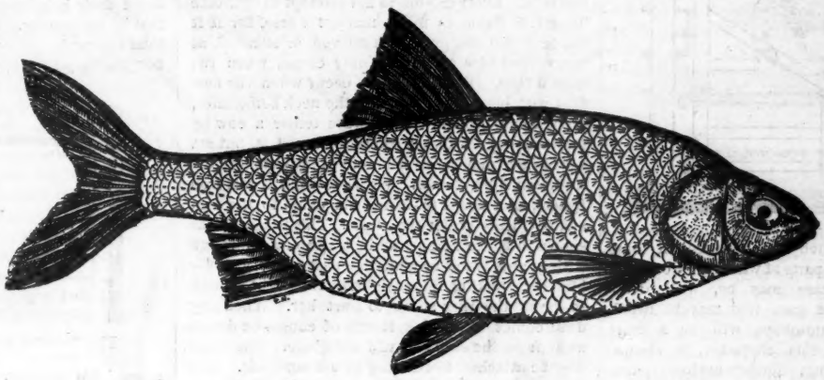


Fig. 2.—METHOD OF OPERATION.

Roach, Dace, and Fishes not "Game."

The abundance, heretofore, of the best class of game fishes, has tended to keep in the back ground, the more common and less valuable kinds. While Brook Trout could be caught in any stream, in satisfactory quantities, fishermen looked with contempt upon "coarse fry" as Roach, Chub, and such despised fish. But there may be too much of a good thing. One does not "want always partridge" or daily salmon, and Connecticut farm laborers of the last century, are said to have stipulated in their hiring agreements that they should not be fed upon salmon more than twice a week. With something of the same feeling we have, ere now, gladly taken home a mess of Chub or Roach, as a welcome variation upon the too frequent Speckled Trout; this being in a part of the country where Trout were very plentiful, and could be had for the throwing of a fly, or a live grasshopper. Fish is a wholesome food, and as everybody can not have the best kinds, which are now scarce and costly, the less esteemed sorts may be very acceptable. There are several fish of this kind; despised and rejected by the fastidious angler, but welcome to others, and more than all, to the farmer's boy who has a day off for fishing and has no hope of taking Trout.

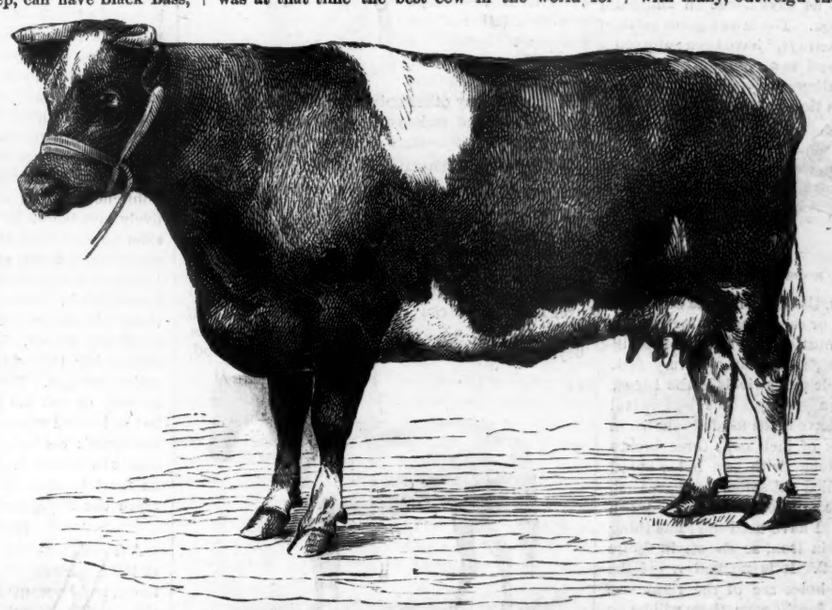


THE EUROPEAN ROACH (*Leuciscus rutilus*).

These fishes are generally soft in flesh, and do not keep well; hence if in the markets at all, are in bad condition, while the same fish, eaten a short time after its capture, would prove very delicate and acceptable. Now that fish culture is making progress, not only by States, but more slowly, by private individuals, it has been found that only those can grow the more esteemed fish, such as Trout, who have the proper waters. Those who have ponds sufficiently deep, can have Black Bass, but there are still others who have upon their places a stream not suited to either of these "game" fishes, and who are no more ashamed to grow fish "for the pot," than they are to raise chickens for "broilers," who can stock their waters with fishes that will supply most acceptable food. A beginning in the right direction has been made by the U. S. Fish Commission, in the introduction of the European Carp. This is said to inhabit parts of the Hudson, where it was introduced many years ago. The rapid growth of this fish, the great size it reaches, and the fact that it can be reared in very small bodies of water, make it probable that the Carp will become very popular in this country. A related fish is the European Roach, this, though much smaller, rarely exceeding five pounds in weight, is one of the common fishes of England and the continent. The engraving given above shows the form of this fish, which has several relatives in our own waters, and a trial only can determine whether this has any superiority for general culture over our own, and very closely related fishes, of the same genus or family,—the *Cyprinidæ*, or Carp Family. The term Roach is applied, in this country, to several different fishes; in New England, what is in other parts of the country "Sun-fish" or "Pumpkin-seed," is generally called Roach; its proper name is Bream, and it belongs to the Perch Family. Another fish, often called Roach, is the Roach Dace, which belongs to the same genus as the European Roach, and is a very handsome fish, reaching 14 inches in length. When our farmers find that they can get food from their waters as well as their fields, they will stock them with the best kinds their conditions will allow, knowing that it is not always the favorite "game" fish of the angler that will supply the most food for his table.

Shorthorn Dairy Cows.

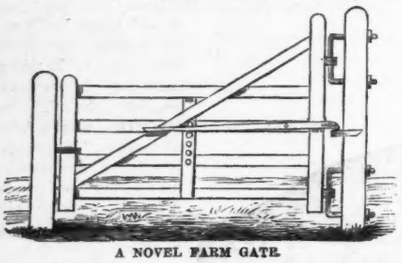
Before Shorthorns were known as a race, or rather before they grew into notoriety as a breed, for they had a reputation as a race before any record of pedigrees were kept, they were known as the best milkers in existence. It was not their square, compact form, or their beef qualities, which most attracted the attention of one of the first, and the most renowned of Shorthorn breeders, Mr. Bates, but it was that the cow he named "Duchess" was at that time the best cow in the world for milk and butter. From this cow have descended all the Duchesses in several diverging lines, but not one of her progeny has ever surpassed the old cow. When the first Shorthorn breeders began to pick up the cows from which they bred their herds, they found some that surpass any record we have at the present time. Bell, in his history of Shorthorns (pages 20 and 21), mentions one cow that gave 26¼ quarts at one milking; another gave 19¼ quarts; and another 18 quarts at a time, and produced 24 lbs. of butter in one week. Mr. Bates' first "Duchess" gave 28 quarts per day and made 2 lbs. 10 oz. of butter from this milk. The first "Princess" (formerly "Bright Eyes"), gave 30 quarts a day; and this is worth noticing, because the Princess family have been so bred as to retain their milking qualities, and to-day have the reputation of being the best of the milking Shorthorns. With regard to the milking character of Shorthorns generally, one might well say, "Oh! what a falling off is there!" But in place of milk we have beef, and we may perhaps question if beef is not before milk. Yet there *are* milking Shorthorns, and as the attention of dairymen is called to the advantages of these excellent cattle for their purposes, we may look for a great improvement in this respect. We give a portrait of a Shorthorn dairy cow which may be taken as a type of the breed. The cow belongs to perhaps the most noted dairy in the world, that of Queen Victoria; noted not only for the excellence of the cows, but also for the most perfect appointments and arrangements of the dairy. In this country we have some pure-bred herds of dairy cows. An excellent dairy herd, consisting of Princess stock, is kept by Hon. Harris Lewis, of Frankfort, N. Y., perhaps the best known dairyman in America. But for the difficulty of getting a good photograph in a rural village, we should have presented here a portrait of one of Mr. Lewis' cows. This herd has been bred for milking, and the cows yield from 40 to 50 lbs. daily of milk, and 270 lbs. of butter in a year. While there are Jersey or Ayrshire herds that will surpass this yield of butter, yet the advantage of having large calves for the butcher, and fat cows when they have done milking, will, with many, outweigh the somewhat greater yield of the smaller cows. There are other good Shorthorn dairy herds in the country, all chiefly of Princess blood, and it is to be hoped that the good dairy qualities of this race will be still further fostered, until they again compare with their ancestors of nearly 100 years ago. While for general use the pure-bred Shorthorn may be too costly, the grade cow may serve an equally good purpose, if a pure-bred bull from a good milking herd is procured. The grade Shorthorn is at present a favorite dairy cow both for milk and butter; and it may serve a good purpose for those who keep grades, that one can call attention to a prominent and excellent pure-bred herd, from which bulls of good character could be procured. When we compare the Shorthorn with the wild cattle of England, or even with our wild Texan cattle, and notice the difference, which, beginning with the horns, extends through every "point" of the animal, we have a most striking illustration of the influence exercised by man over domestic animals. When to this we add the fact that in portions of the breed the milk production has been influenced in a remarkable degree, we both wonder at and respect the skill of the breeder.



QUEEN VICTORIA'S SHORTHORN DAIRY COW, COLDCREAM 4TH.

A Lifting Gate.

While fences are used, gates and latches will be needed, however undesirable and troublesome to keep in order they may be. A gate and a latch that will meet all requirements, have hardly yet been devised, and possibly never will be, still there are



A NOVEL FARM GATE.

some gates that are much more convenient than others. In this country, parts of which are troubled, or blessed, as the case may be, with deep snows in the winter, a gate that may be lifted up as the snow accumulates, will be a convenience. A gate of this character, is shown in the annexed engraving. Rather curiously, the idea of this gate is given in a recent English paper, the "Agricultural Gazette," which has borrowed many good things from the *American Agriculturist*, for the information of its readers. The manner of its construction will be easily seen; the lifting part consists of a lever, pivoted to the gate, and pins are provided to secure the lever, as the gate is raised or lowered, to suit the necessities of the case. The parts of the hinges, affixed to the gate post, are long, and admit of the other parts sliding upon them, as the gate is raised or lowered. The secured end of the lever is fitted into a piece of iron affixed to the gate post, as shown in the engraving; the free end is held in its place, by means of the pins inserted in holes, made in the bar of the gate.

Among the Farmers.—No. 44.

BY ONE OF THEM.

Tethering Cows and Horses.

The highways about us have borne an unusual crop of grass this season. The laws against cattle on the highways and "astrays," have been enforced with unwonted rigor, and as a consequence many cows have been seen tethered along the roadside. They are almost always tied by the horns, and the

Fig. 1.—A ROPE SWIVEL.

tether-line is about 20, though often 40 or 50 feet long. Commonly half or three-quarter inch hemp rope is used, and this must be well tarred, or it will both kink and untwist, and wear out very fast. I notice that few people put swivels in the ropes, which would save them greatly. The best swivel I know of, and one I have often used, is shown in figure 1; it is a block of inch oak, three inches wide and six inches long, with two holes bored through it; these are filed out smooth and greased, or better, waxed. The ends of a rope are drawn through and knotted. I have used the same thing in iron, as shown in figure 2. It is no better. If the holes are of the right size for the rope, there will be no twisting or kinking. Still, ropes at best are poor things to tether by, and whoever once uses a chain will continue to do so. Old trace-chains, even if quite worn, do very well if the pieces are fastened together by S links, which any blacksmith can make if you give him the size of the chain; but the chain for cows is a little lighter.

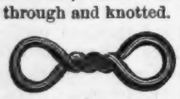


Fig. 2.—IRON SWIVEL.

How to Tether a Cow.

I disapprove entirely of the practice of tethering by the head, having known several good cows killed by this alone. When the cow is at the end of her tether, and reaching out for that which she cannot get, (this is exactly what she wants most and often first, and in this she is very human in her ways), she raises the rope or chain just high enough above the ground to get it around one of her hind feet, when she turns. This causes her to back, and that only draws the tether tighter, and her head to one side. Every motion in her attempt to extricate herself, is liable to make matters worse, for if it happens that the ground is uneven, or terraced, as many roadsides are, relief only comes when the animal falls. The fatal cases occur when the cow falls with her head under her, the neck sometimes, even, being broken. We always tether a cow by the hind leg. I forget where I learned it, but am sure I have mentioned it before in my letters to the *American Agriculturist*. We have used cords, iron fetters, and straps to fasten the chain to the leg, and decidedly prefer the strap. This is applied as shown in figure 3; pass an inch strap *twice* through a ring, and twice around the pastern of a cow's hind leg, buckling rather tight, but not tight enough to press the ring so as to hurt her. When any draft comes on the ring, it will of course be drawn away from the skin and will not chafe. The chain may be attached to the ring by a snap-hook. It is well to attach the chain for the first time in the stable, for then the cow will get accustomed to it and not kick. When lead out to feed, let her drag the chain for the same reason, and before driving the stake, let some one hold the chain in the hands a little while, so that she may find out that she is fastened and held by it. In this method of tethering, a cow will not hurt herself even though she kicks violently. Another great advantage is, that the chain drags through and spreads the manure while it is still soft. Another is, that when a rather long chain is used, and the grass is heavy, she need rarely be given over six feet of fresh feed at a time, and thus all the manure will be dropped on the space already cropped. The principal advantage, however, is the one already alluded to, by inference — that a cow thus tethered, can not hurt herself. I have never known a case of tripping and falling, or of any other entanglement than winding the chain around stakes or bushes, and thus limiting her range of feeding to a very short compass.

Fig. 3. TETHER FASTENING.

Tethering Horses.

While on this general subject, a bit of personal experience may be worth recording. I have four young horses, three of them half Orloff, one a two-year-old filly, of unknown pedigree, large for her age, gentle, good-natured, but bound to be a leader in any mischief colts can get into. She will push over fences if she can; she will jump over any thing in the shape of a fence, and when out will wander beyond all account. Our fences are pretty good,

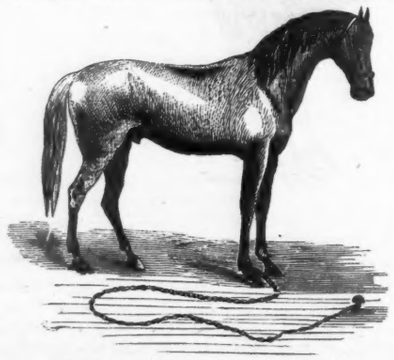


Fig. 4.—FOOT TETHER FOR HORSE.

but this creature knew no bounds, *so we bound* her. She has been tethered now for several weeks, and we have had peace. The system followed is precisely that used in the army, and I believe copied from French practice, namely, picketing by the fore foot, as shown in figure 4. By the hind foot for cows; by the fore foot for horses is the way to tether safely. Thus fastened, the horse is absolutely secure. The tether-pin may even be loose, he can not draw it out if the chain or rope is six feet long. I have seen spirited horses thus tethered, and kept wonderfully quiet. They seem to understand their helplessness, as much as a man when tied by his thumbs. I think I would risk any horse thus fastened. I have never seen one trip and fall, nor pull very hard upon the chain, nor get the chain

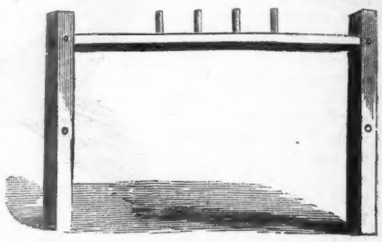


Fig. 5.—THE SOUTHERN HITCHING BAR.

around his hind leg. That is really the great danger in tethering a horse by the head. He gets a rope or chain around his hind leg, and his fore feet being at liberty, he plunges, cuts his pastern, or wears the skin off, and if no other harm happens, he has a sore very hard to heal, and liable to break out as "grease" or "scratches" at any time.

In tethering both horses and cows, it is best to shift the fastening from one foot to the other every few days, so that the skin shall not be chafed. I have used a number of patent tether-pins for chains, and decidedly prefer a simple ¾-inch pin, 16 inches long, to go through a ring, and with a big head.

A Hitching-bar for Saddle-Horses.

How few people make any provision for friends who may call on horse-back. One must hitch his horse to a common hitching-post, probably near a border or sod-bordered roadway, or wait holding his horse until a man can be sent for. This, of course, is the style, and the thing to do,—that is—have a stable-boy within call to come and take the horse of a friend—but I don't like it. The Southern way is far preferable, and that was the style even under the old *régime*. When a saddle-horse is hitched at a common post, he of course makes the circuit of it, paws up the sod, treads down the plants in the border, if it be near by, and makes the well-raked gravel look as badly as possible. Besides, he rubs his bridle, and will roll if he can, and when his rider mounts, of course the horse is unhitched, and is at liberty to give him quite a lively turn before he can get on, unless, indeed, the rider be young and athletic, and can mount and dismount on the trot, as is done at the riding schools. I enclose a sketch (fig. 5) of the Southern plan, as I recollect it. Two posts are set, say 14 feet apart, these support a bar, in the top of which several stout pins are set. The rider brings his horse under the bar, throws the reins over one of the pins, and dismounts. The horse is safe, he cannot rub or roll, or get his head to the ground, and the bar is located where he may paw and carry on to his heart's content, and do no harm. When one comes to mount, he has his horse held for him, for he must be upon the horse in order to be able to reach the reins, and take them off from the pin.

Saddle-Horses.

A friend, who has been spending several winters at the South, applied to me to get him a saddle-horse, and he wanted "to guide by the neck." We ride so little about here, that very few horses are brought to New York, or indeed to Eastern markets as saddle-horses. If a horse can be "warranted sound and kind in all harness," that is enough, and if he can be certified to carry a man on his back, he will readily sell for a saddle-horse.

I was fortunate in being able to find a nice "block of a horse," the English would call him a "cob," which had pleasant gaits under the saddle, and was "good in all harness," besides being as free from vice as a pet kitten. He guided by the

bit, and not by the neck, as my friend found when he tried him under the saddle. When I took occasion to mount, for curiosity, I tried the neck pressure, and the throwing of the end of the reins over to strike on one or the other shoulder, which usually accompanies the movement of pressing the

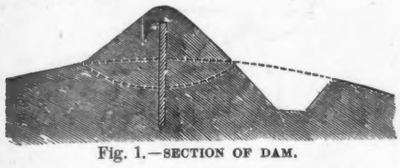


Fig. 1.—SECTION OF DAM.

neck with the rein, and was pleasantly surprised to find that the horse so quickly took the idea, that it was clear that previous training was thus brought to mind. He proved well trained to this practice, and it would be very easy to teach him to guide by knee or stirrup pressure without the use of the rein at all. This, every saddle-horse ought to know, and it requires but a little patience to teach them. Ladies' saddle-horses ought always to guide by the neck. It gives the rider so much more ease and freedom than if the horse must always feel any considerable pressure on the bit. I do not hold myself up as a good rider, but I enjoy riding highly, and it certainly would lose half its charm if I felt obliged to keep a tight rein all the time. I want to give the horse his head most of the time, and to be able to trust him to not do anything foolish. Then an almost unconscious motion to the right or to the left, of the hand holding the reins, bringing the opposite rein against the horse's neck with a very gentle pressure, must turn him in the direction indicated. This is the way we used to ride, when boys, bare-back, and with only a halter, the end being sometimes passed around the horse's neck and tied in the ring, but oftener not. One has always the bit as a final resource, and it is always used to stop.

A Dam for a Fish Pond.

In making a fish pond, by placing a dam across a stream, it should be borne in mind that success depends upon the proper construction of the dam, whether it be large or small. Any defect here, will make the whole useless. The main point in the construction of a dam is, to have a complete union

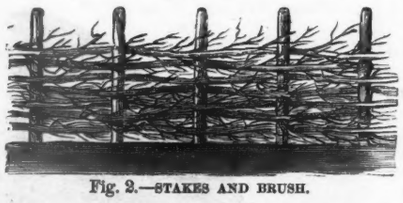


Fig. 2.—STAKES AND BRUSH.

between the earth of the bed, and that of the dam. This cannot be done by throwing the earth upon an old surface. A new surface must be made solid and firm, to receive the new earth. In addition, there should be a central core of some strong material, that will serve to strengthen and bind the new construction. In making a dam or embankment to retain or exclude water, the beginning should be to dig a shallow ditch, removing sod or uneven ground, or if the earth is bare, to disturb it thoroughly with the pick, so as to provide binding material to unite with the bottom of the dam. The ground is prepared as shown at figure 1. The dotted line is the original surface line; the hollow represents the portion of the surface removed, the perpendicular line in the center of the embankment, shows the position of a line of stakes driven into the ground, and filled with brush woven in, or wattled as in fig. 2; the dark outline, in fig. 1, represents the dam on one side, and the excavation on the other, from which the earth has been taken. In building the dam, all the sods and vegetable matter should be placed on the outside, where these will root, and bind the surface together; the rest of the earth should be well trodden, or rammed down firmly, and if the soil is puddled by admixture of water in the process of ramming, the work will be better for it. The water-way in the stream should be tightly boarded or planked. Three posts may be driven or set on each bank of the stream, and boards nailed, or planks spiked for a larger structure, so as to retain the earth of the embankments on each side, figure 3. A timber is fitted as a mud-sill, to the front and rear posts, and one to the central posts; the latter at such a hight, as will raise the water to the desired depth. The spaces between these timbers are boarded and planked, and may be filled in with earth, well rammed, and mixed with straw and fine cedar brush, under the covering. If it is desired to raise the water to a greater depth, loose flash-boards may be fitted with cleats, on the center of the waste-way, or a wire-gauze fence may be placed there, to prevent the escape of the fish. If freshets are apt to occur, a sufficient number of these waste-ways should be provided, to carry off the surplus water, and prevent overflowing, and wasting of the dam.

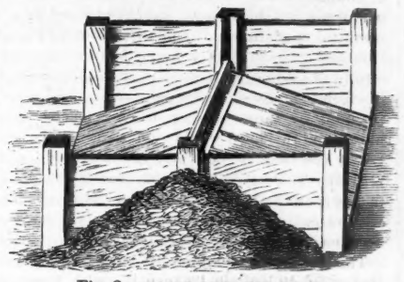


Fig. 3.—WASTE-GATE FOR POND.

The dam of a fish pond should always be made high enough for safety against overflow, and to guard against percolation, and washing away by undermining, it should be made three times as wide as it is high, with slopes of one and a half foot horizontal on each side, to one foot in perpendicular hight. If any plants are set upon a dam or embankment, they should be of a small, bushy growth, such as osier willow, elders, etc., but nothing larger, lest the swaying caused by high winds should loosen and destroy the bank.

Sowing, and Cultivating Wheat.

The Hessian fly seems to have done but comparatively little injury to wheat the present season. If, as may be supposed, this pest has succumed to its natural enemies, and to the measures which have been taken to repress it, and we are to be relieved from its presence for another period of years, it may be well to return to the practice of early sowing. Early sown grain, both wheat and rye, have far exceeded the later grown, in yield and quality. The latter part of August, is not too early to sow. This gives the plant abundant time to tiller, and spread over the ground, and there is far greater danger that a thin stand may be winter killed, than that a thick growth may be smothered by deep snows. Wheat, or rye, sown in August, may be thinly seeded. One bushel per acre, is sufficient upon well prepared ground; and it will be worth while to try an acre or two, sown in wide rows, at least 16 inches apart, for the purpose of testing the utility of cultivating them. As it may be considered a risk to purchase a costly implement, especially for cultivating wheat, before the practice has been tested and approved, we suggest the use of a home-made cultivator, similar to that shown in the accompanying engravings. A frame may be made of the form shown at figure 1, of 1¼-inch hard-wood plank, put together with ⅜-inch carriage bolts. Those who have disk harrows, may fix a disk in the center, and one at each side. Otherwise a wheel may be fixed in the front of the longitudinal bar, for the purpose of steadying the cultivator, and either common harrow teeth, small shovel

Fig. 1.—THE FRAME.

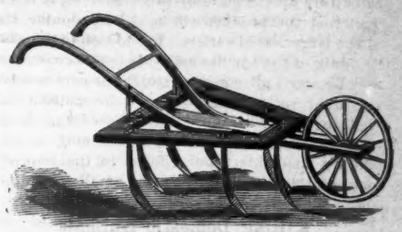
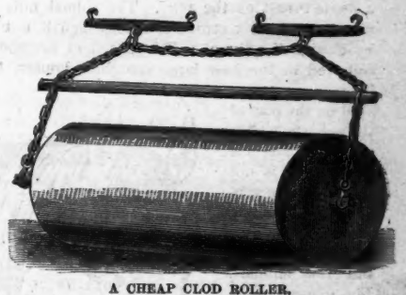


Fig. 2.—WHEAT CULTIVATOR.

plows, or cultivator teeth, whichever may be at hand, can be used. A tool of this kind may be constructed in a few hours, which will serve to test the value of the practice of cultivating wheat. To sow the seed for this purpose, a drill with 8 inch spaces should be used, and each alternate spout should be plugged up, or stopped in some manner. In the absence of a grain drill, an experimental piece of wheat may be sown, without much difficulty, by the use of a garden seed drill, properly arranged for the work. The cultivation of the wheat should begin as soon as the rows are distinctly visible, and it should be repeated twice before the ground freezes, and at least once in the spring, as soon as the soil is in good condition for the work. It is safe to expect the yield to be doubled; at least half the seed is saved, and the ground is cleaned of weeds. If grass seed is to be sown, that should be done after the spring cultivation, when it will be most likely to succeed. The completed cultivator is shown at figure 2.

A Method of Using a Roller.

The engraving shows a method of hitching to a roller, which is recommended as preferable to using a tongue. When uneven ground is rolled, the roller falling into hollows, causes the tongue to work back and forth, sometimes so violently, as to strike and injure the horses. This trouble is avoided, by use of the chain and hooks. This method is much cheaper than the tongue, which requires a strong, and comparatively costly frame. Each horse is hitched to the chain separately, but neither can take more or less than his share of the work, without drawing the roller out of line, and showing the irregularity; so that the objection which might occur at first sight, is really without force. The driver will be obliged to keep the horses working equally, to cause the roller to move in a straight



A CHEAP CLOD ROLLER.

line. The roller here shown, consists of a white-oak log, 7 feet long and 26 inches in diameter. An iron pin, with a large head, is driven into each end, the draft chain is hooked to each pin, and, as shown in the engraving, an iron bar spreads the chain.

Which is the Most Prolific Corn?—It is a question worth considering in what direction we shall "breed" our seed corn. Whether it is better to encourage a growth of one large ear upon each monstrous coarse stalk, or aim at getting two or more smaller ears, upon a medium sized stalk, one which may be used for fodder, and thus allow the whole plant to be utilized. In the West, the aim is to have one large ear, of which 100 will produce a bushel of shelled corn at least. In the East, some corn growers are striving to "breed" a corn which

shall produce three or more ears upon a stalk, of which 150 will yield a bushel of shelled corn. With three ears upon a stalk of this character, it is evident that the product will be at least double that of the larger-eared variety. In addition to this gain, the stalk of the smaller variety is not so coarse, and may be nearly all consumed, and the ears are better fitted for feeding whole, or for cutting into chaff together with the stalks. These items should all be taken into account, in determining to what end we shall direct our efforts, in the improvement of this, the most valuable of all our crops.

Killing Domestic Animals.

Animals are often killed in a needlessly cruel manner, partly from thoughtlessness, but mostly from ignorance. Every farmer is likely to be called

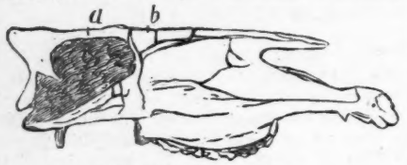


Fig. 1.—SKULL OF HORSE.

upon to terminate the life of some animal; it may be for food, or because some serious injury or fatal disease, makes it necessary to put an end to its life. There are three principal methods of killing animals: 1st. Cutting the throat without first producing insensibility; a method adhered to with such tenacity by the Jews; 2d. Rendering the animal insensible by a blow upon the head, or by piercing a portion of the brain or spinal column, by means of a sharp instrument, followed by bleeding by cutting the throat. 3d. By the use of Anæsthetics, as Ether, or Chloroform, to render the animal insensible, or if small to kill it entirely.

The first method is to be condemned for its cruelty; and because it injures the flesh, if the animal is killed for food. All intelligent butchers understand that the quality of the meat is influenced by the manner in which the animal is slaughtered. Anything like prolonged fear or torture promotes secretions which act deleteriously upon the flesh. In the second method, the practice of "pithing," which consists in producing a sudden shock to the whole nervous system, by piercing a small portion of the posterior part of the brain—known to anatomists as the *medulla oblongata*—with a sharp instrument, is probably the most humane method of producing insensibility: in this operation the man stands upon a platform above the animal, and gives a single thrust of the *spud*. The animal falls instantly, without a struggle, after which it is bled by cutting the throat. This excellent method is followed in the best large slaughter houses, but it requires great skill on the part of the one who wields the *spud*, and for this reason is not practicable for general use among farmers, who, during the year, kill but few animals. For general practice, a sharp and vigorous blow upon the head, with an axe or maul, is the best. The end to be reached is the derangement of the brain, as consciousness, and sensibility to pain, remain as long as this is unimpaired; therefore the blow should be directed at the brain. In killing an animal in this manner, many strike too low, and fail to bring the animal to the ground at the first blow, thus causing a needless prolonging of pain. Figure 1 shows the locality of the brain in the horse, as seen in a cross-section view of the skull. It will be seen that the point, *a*, is the place to strike, and not *b*.

Fig. 2.—HEAD OF HORSE.

Figure 2 shows a front view of a horse's head, with the point, *a*, which is ordinarily covered by the tip of the fore-lock, and is at the intersection of the lines running from the base of each ear to the eye on the opposite side. Figure 3 shows a cross-section of the skull of an ox. The brain, *c*, is smaller than in the horse, and protected by thicker frontal bones. Figure 4, *a*, gives the point to be aimed at where the blow should be struck, and that is at the intersection of the lines joining the base of the horn and the opposite eye. The point is not "between the eyes" as may be seen by the position of *b*, in figure 3. There is no brain below the surface between the eyes. In all cases the head should be securely fastened, and it is advisable to blindfold the animal. In the far West, where good marksmen are the rule, slaughtering is frequently done with the rifle. In proper hands this method is to be commended as sudden and painless, but no one who is not a "dead shot" should attempt it, as a wounded and infuriated ox may be a source of much trouble. A small animal should be treated as mercifully as a large one, and be made instantaneously insensible. Calves, sheep, and swine, are usually tortured by throat-cutting, when a single sharp blow upon the head would end their misery; the throat can then be cut, and the bleeding accomplished. To "stick" a hog so that it will die by inches is altogether wrong. A few judicious blows with an axe will make the hog-killing day a far more humane and less noisy one in many a farmer's yard.

The third method, taking life by the use of anæsthetics, is difficult and expensive with large animals, and is rarely practised with small ones, though where it is necessary to end the life of a dog,

Fig. 3.—SKULL OF OX.

cat, or other pet animal, it may be resorted to. The animal, if placed in a small tight box, with a sponge or cloth wet with Ether, or Chloroform, will soon become insensible, and die with no suffering.

Fattening Poultry for Market.

No fowl over two years old should be kept in the poultry yard, except for some special reason. An extra good mother, or a finely feathered bird that is desirable as a breeder, may be preserved until 10 years old with advantage, or at least so long as she is serviceable. But ordinary hens and cocks should be fattened at the end of the second year for market. Feeding for this purpose may be begun now. When there is a room or shed that can be closed, the fowls may be confined there. The floor should be covered with two or three inches of fine sawdust, dry earth, sifted coal ashes, or clean sand. The food should be given four times a day, and clean water be always before the fowls. A dozen or more fowls may be put at once in this apartment, so that there may not be too many ready to sell at one time. The best food for rapid fattening, for producing well flavored flesh and rich fat, is buckwheat meal, mixed with sweet skimmed milk, into a thick mush. A teaspoonful of salt should be stirred in the food for a dozen fowls. Two weeks feeding is sufficient to fatten the fowls, when they should be shipped for sale without delay, and another lot put up for feeding. If the shed is kept dark and cool, as it should be, the fowls will fatten all the quicker for it.

The Cost of Soiling Cattle.—The supposed large amount of extra labor involved in soiling cattle upon green fodder crops, cut and carried to them in yards or barns, is the greatest objection urged against the system. While a certain amount of extra labor is needed, this is by no means so onerous or so costly, as to overcome the advantages of the system. By the use of a one-horse mower, hay rake and wagon, green rye, clover, oats or millet, sufficient for a day's fodder for 20 cows, can be mowed, gathered, loaded and hauled a quarter of a mile to the stable in one hour, by a smart boy of 14 or 15 years. The labor of feeding, watering and

Fig. 4.—HEAD OF OX.

cleaning the cattle, will occupy two hours more. If half a day is thus taken up, it will cost about a cent and a half a day per cow, for the labor. The saving of manure will more than pay this, and there are other savings about the system, which will sum up in all to a respectable profit. It is on small farms that the advantage of soiling is the greatest.

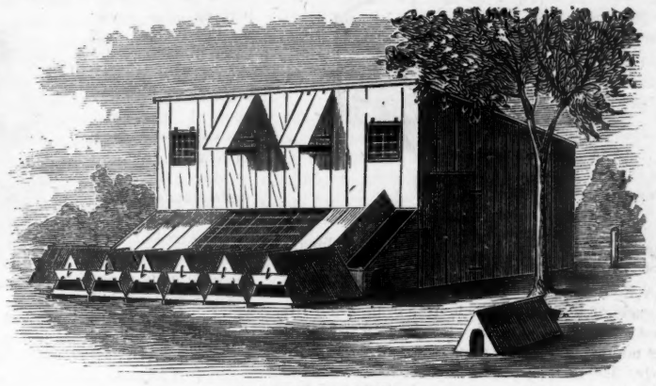
How Domestication has Modified the Hog's Head.

Probably no part of any domestic animal has undergone greater modifications, both in internal structure and outward form, than the head of the hog. Indeed, the whole body of the animal has changed so wonderfully, that the wild hog and our finest specimens of the improved breeds, would hardly be thought to be the wild and domesticated forms of the same species. As Darwin, in his wonderful work, "Animals and Plants Under Domestication," says: "The whole of the exterior of the skull in all its parts has been altered; the hinder surface, instead of sloping backwards, is directed forwards, entailing many changes in other parts; the front of the head is deeply concave, etc." As to the teeth, the incisors, or "nippers," do not touch, in the domesticated hog, and the canine

WILD BOAR AND DOMESTIC HOG.

teeth are small and differently situated from what they are in his savage ancestors. In the highly domesticated animal its head is much shortened,

so that its ratio to the body is as one to eleven, while in the wild hog the long head, with its formidable snout, is one-fifth of the whole length of the animal. Why should the head of the hog, especially, undergo such remarkable changes in passing from the wild to the domestic state?—To answer this question, we must remember that the wild hog, in his search for food, is obliged to do much plowing, or "rooting," in the earth, and that this requires the exercise of strong and long muscles, as well as a long and pointed head. The cultivated races no longer find it necessary to root in the earth, and the muscles required by the wild animal in this work become inactive, and diminish in size from disuse. The long snout is no longer essential, and it, by degrees, shortens into the stub nose which we see in the improved breeds. At the same time other organic changes have been made, and we find the whole head modified to suit the weaker muscles, shorter nose, and the new outward conditions. Again, man has, during all these centuries, bred the hog for a special purpose, namely, flesh and fat, and the head has been modified to suit the tendencies of the rest of the body—and fat abounds wherever it can find a place of deposit.

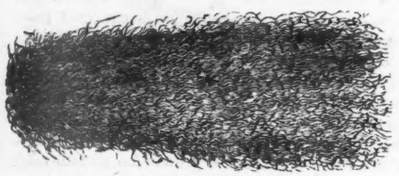


THE CHICKEN HOUSE.

The most highly improved pigs of to-day would find it a severe task to get their living in the rough way of their wild ancestors; but should they succeed, and continue outside of man's care, each generation would acquire characters which would better and better fit it to surrounding circumstances, and in the course of time the rooting organ would again appear in all its strength and utility—the swine would have run wild. We give, for the sake of the contrast, a head of the wild hog, and one as modified by the conditions which man has imposed.

The Value of Cross-bred Sheep.

To the general farmer there is most profit in rearing grades. This is true of any animal, whether



SAMPLE OF CROSS-WOOL.

beef cattle, dairy cows, sheep, pigs, or poultry, it is the grade that pays the farmer best. There must be pure-bred stock, to supply the material for the grades, but breeding of pure-bred animals, and of grades for market purposes, must be kept distinct. This is well exemplified in the western grazing business in which the coarse Texan cows are crossed with pure Shorthorn, or Hereford, bulls, and the progeny are sent to Europe, to compete with the best butchers' cattle there. Grades are larger and more productive than the pure-bred animals, and as they cost less, there is the more profit in them. In regard to sheep, this is thoroughly well proved. Grade Merino wool, is more profitable than the pure-bred, and the carcass of a cross-bred sheep is better mutton. The Merino, or common Grade Merino, make perhaps the best foundation for a farmer's sheep, when crossed with South-down, or Hampshire-down; the produce is a plump, fat, but smallish lamb, with the black face and legs, so popular in the market; crossed with a Cotswold ram, the lambs are large, and when six months old, will weigh more than the dams; and the fleece is in demand for both clothing and for combing purposes. As mutton, this cross is the best and cheapest; the South-down, which is really, when pure, the best mutton, is neither so large in carcass, nor do its grades, under the best of care, give either the wool or the meat, that the Cotswold grades do.

The frequent references to the advantageous crossing of the fine and coarse-wool sheep, which have been made in the *American Agriculturist* for a few years past, have created considerable interest, and many persons have experimented in this way. Joseph Harris, of Rochester, N. Y., well known to our readers, has been very successful in thus crossing grade Merinos with Cotswolds, and has produced some remarkably fine sheep and lambs. Mr. J. L. Gerrish, of New Hampshire, who has also been working to the same end, sends a sample of the cross-wool, of which we have made an engraving. This wool, as may be seen, is of considerable length, some being five inches or more, and while it is long enough for combing purposes, it retains the fineness and some of the peculiar curl of the Merino wool. This cross-wool is valuable for manufacturing, and the carcass is excellent mutton.

A Breeding House for Chickens.

J. H. Kemp of Germantown, Ohio, whose poultry house described in the *American Agriculturist* for June last, page 226, has been much commended, sends us a plan of his hatching and rearing house, of which an engraving is here given. The house has been in use for three years, and the arrangements prove to be convenient and healthful, the loss of chicks, having been but two in a hundred last season, which was exceptionally unfavorable, as the average loss, during the whole period, has been but one in two hundred of chicks taken from the nest. When a chick is safely hatched, and is strong enough to be removed to the coop, there is no reason why it should be lost, except through carelessness, or faulty management while in the coops. All the accidents or diseases, which kill the chicks, arise in this way, and gapes, which is the dreaded evil attendant upon young broods, is especially a result of bad management, while in the

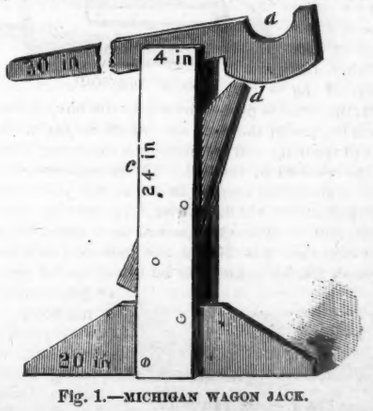


Fig. 1.—MICHIGAN WAGON JACK.

coop or runs. A good method of constructing and managing the coops and runs, is therefore of the greatest importance. The building in question is well adapted for this end. It is 12 x 14 feet on the ground, 9 feet high at the peak, and 6 feet at the eaves. There are two windows on the south side, and two doors, hung to open outwards from the bottom. A roost runs all around the outer edge, which is intended to accommodate 100 chicks, and give them ample room; but in no case are more than 100 chicks kept in one house. There is a feeding room, 3 feet high, joining the house at the south side, and one foot high at the side or eaves, meeting the coops, and 4 feet wide, with a half glass roof in the center, a door at each end on the roof, to clean and feed. A 2-inch hole is made at the rear end of the coop in the feeding room, to pass feed through. The coops used, are the same as those described by Mr. Stoddard, in his book entitled "An Egg Farm," with the scantling, used to slide the coop back, sawed off so as to let the coop meet the bars of the feeding room. The rear end of the coop, has a hole large enough for the passage of the chicks but too small for the hen; this meets a similar hole in the wall of the feed room. When the front door of the coop is open, as shown in the engraving, the chicks can pass in and out freely. The building is used as a hatching room, until needed for young chicks. No chicks are hatched later than May. The young birds have an unlimited range, except on cool mornings, when they are restrained until the ground is dry and warm. The house is cleaned every morning, and the coops every week; the coops being then littered with dry earth. Mr. Kemp has never had a case of gapes, or any other disease among his chickens, which is an indication that his place is well arranged.

2.—CATCH BOARD.

Some Wagon Jacks.

Mr. Edwin M. Fairchild, Lansing, Mich., sends sketches of a home-made Wagon Jack, which has been in constant use for ten years, and has proved most satisfactory. The drawings were made with such care, the measurement being placed upon them, that the engravings tell nearly the whole story. Figure 1 shows the Jack when in

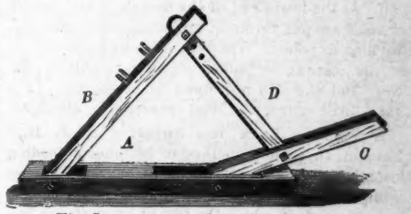


Fig. 3.—SCHLUETER'S WAGON JACK.

position to hold the axle, at *a*. When not in use, the lever falls down out of the way, and the affair can be hung up in a handy place. Figure 2 shows the "catch board," and the dimensions proper for a Jack, for an ordinary wagon, buggy, etc. It is so shaped and fastened by a pin between the upright parts of the Jack, that it is pushed in position, *d*, by the foot at *c*, when the axle is raised; and falls back of its own accord when the lever is raised a trifle to let the wheel down. All the parts are made of inch stuff, the foot board, catch, and lever should be of hard wood; the upright boards between which they are placed, can be of pine or other soft wood. Persons who see this simple and convenient wagon jack frequently say, "Why don't you get it patented?" but the inventor thinks that such simple things, which any one can make, ought to be contributed for the common good, and in the same spirit we commend it, to any who may be in need of a good wagon jack.

ANOTHER JACK.—Since the above was in type, we have seen a very simple and effective Jack, made by Mr. Karl Schlueter, of Bergen Co., N. J. This is an ingenious combination of levers, the operation of which will be readily understood from an inspection of figures 3 and 4. It may be readily made from a few pieces of 1¼-in. plank. The base, *A*, is

34 in. long and 6 in wide; near one end is an opening which admits the end of the lever, *B*, which is fastened by a bolt, upon which it moves; this is 40 in. long and 3 in. wide, and has several stout wooden or iron pins, upon which the axle of the wagon rests. At the opposite end of the base is the lever, *C*, fastened below by a bolt; this is 26 in. long, and 3 in. wide; between *B* and *C* is another lever, *D*, 28 in. long, and 2½ in. wide; this plays in slots in *B* and *C*, as shown in the engraving; it has several holes near each end, to allow it to be adjusted as desired by means of strong iron pins passing through *B* and *C*. The Jack being placed so that one of the pins on *B* catches the axle, the lever, *C*, is thrown over so that its upper end rests against *B*, as seen in figure 2; this raises *B*, and consequently the axle, and the Jack is so locked that the greater the weight the firmer it is. Throwing *C* back again lowers the axle and releases the Jack.

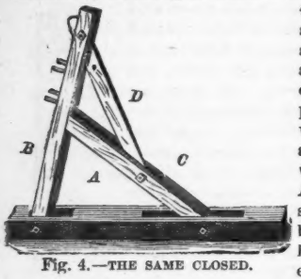


Fig. 4.—THE SAME CLOSED.

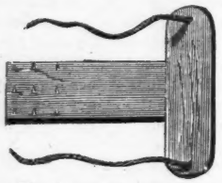


Fig. 1.—CALF MUZZLE.

Hints and Helps for Farmers and Mechanics.

A CALF MUZZLE.—Dr. W. A. Neville, sends a model of a muzzle, to prevent a calf from sucking the cow while being weaned. It is made of a piece of board 4 inches wide, and 12 inches long, to reach from the top of the head to the nose; a cross piece of the same size, is fastened as shown at figure 1. Holes are made in the latter piece, to admit of a small rope or a strap, to fasten it to the head of the calf. At the lower end of the muzzle, a few screws or nails are put through, projecting outwards, and are filed to points. When the calf attempts to feed at the teat, these points are disagreeable to the cow, and she will not stand to be sucked. In a very little time, the calf ceases its attempts.

A FEEDING RACK FOR SHEEP.—"A. J. H.," Lemont, Ill, sends a method of building a feeding trough, and rack for sheep. This trough is 16 inches wide, and 4 inches deep, with cleats nailed across, near the ends to which the feet or supports are fastened. The rack is held by an upright piece at each end, in which holes are bored; pins are inserted in these holes, to hold the rack in place above the box when grain is feed to the sheep. The sheep can feed on both sides of the rack, if it is placed in a yard, or the middle of a shed; or on one side only, if it is built against the inside of a shed. The end of the trough is shown at figure 2, and a side view of the same is given at figure 3.

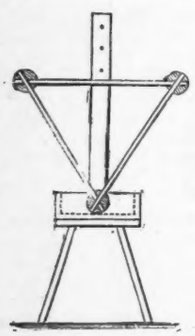


Fig. 2.—END VIEW.

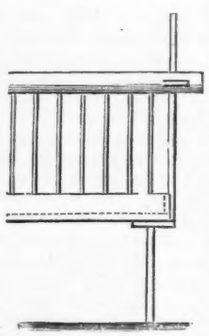


Fig. 3.—SIDE VIEW.

AN END BOARD FOR WAGONS.—"A. W.," Tecumseh, Mich., sends drawings of an end board for a wagon; by which corn ears, or any other similar material, may be easily unloaded. The engravings, figures 4 and 5, tell the whole story. The board is attached to the wagon box by two strong hinges, and the ends should go outside of the box.

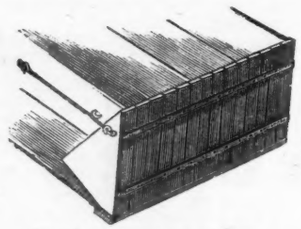


Fig. 4.—END BOARD CLOSED.

A ROOFING STAGE, by "R. T.," Evergreen, La., is made of a piece of 2-inch strap iron, or old tire, bent as shown at figure 9. The iron is twisted in the middle, so that the edge is turned perpendicularly. The hook at one end holds to the roof strips, and the other is bolted loosely to a piece of 2 x 6 timber as long as may be desired; the whole length of the roof, if thought proper, but not too long. Several holes may be punched in the lower end of the strap, so as to lengthen or shorten the stage. The 2 x 6 strip serves as a guide to lay the shingles, shakes, or boards, on the roof, and a stage to support the workman. As the bolts are loose, one end may be raised at a time when it is to be moved for another row of shingles.

A SPRING, AND HINGED LATCH, for gates and doors, is shown at figures 6, 7 and 8. This latch is the invention of P. H. Hough, of Sussex Co., N. J., but is not patented, and is free to be used by all, who have the ingenuity to make it, or may employ a blacksmith to do it for them. The bolt is shown at figure 6; the box for the bolt at figure 7, and the bolt as attached to a gate or door, at figure 8. The bolt is hinged in the middle, so that it opens backwards only, and is returned to its place after opening, by the spring fixed to the back. When the door is opened, a strong push is given, sufficient to move the spring, and permit the hinge to work. When the door is closed, the edge of this striking the bevel of the bolt, the latter is pushed back into the box, sliding upon the pin in the box, and which moves in the slot of the bolt; and pressing upon the spring fitted in the rear end of the bolt. The spring causes the bolt to shoot back again, as far as the pin in the slot permits it, which enables it to hold the door shut, until it is forcibly pushed open again. It is obvious that this bolt is not intended as a permanent fastening, but will be found useful upon gates, and inner doors, or where separate locks are used, to secure outer doors. The principal convenience seems to be, that no handles are required for the doors, when this bolt is used.

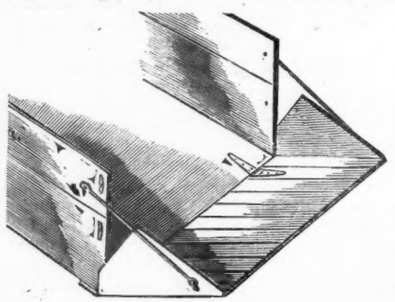


Fig. 5.—END BOARD OPEN.

Fig. 6.—THE BOLT.

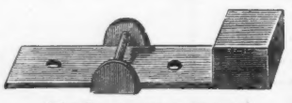


Fig. 7.—BOX FOR BOLT.

Success with Sheep.

Many successful ventures have been made in sheep-herding in the West, but more have resulted in loss. To prevent risk, there should be no ventures. A venture is of necessity a risk, and sheep-herding is a staple business, that, if entered judiciously, should have no element of a venture about it. Otherwise the risks are so great, that failure is almost certain. If a man understands the management of sheep, and is possessed of business habits, he may go to keeping sheep, with every probability of overcoming every adverse obstacle that may confront him. If he has had no experience, every probability is against success. It is not enough that one has the means to purchase a flock, and provide every requirement for their care; there are numerous exigences, which will arise, when damage will be sustained if proper precautions or remedies are not used. If a man desires to invest money in the business, and can procure an experienced partner, in whose integrity he can place confidence, he may do well with his venture, for it is a venture; but there must be economical purchase at the outset; a good range with water, timber shelter, and grass for hay; intelligent breeding, careful supervision, judicious feeding, a well defined plan, and if there is a partnership, a clear and simple written contract should be made out, so that no dispute can arise as to division on profits, risks, or losses.

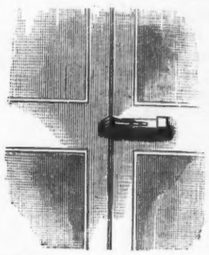


Fig. 8.—BOLT ON DOOR.

Fig. 9.—ROOFING STAGE HOOK.

Export of Provisions and Breadstuffs.—The export of all kinds of agricultural products to foreign countries continues to increase, and the promise for the coming year is even more encouraging than that of last season. Another unsatisfactory harvest is impending in England and in France, and the supply by which the deficiency in both countries is to be made up is expected from America. Both good and evil grow out of this. The people generally are assured of an abundant supply of food of all kinds without any inconvenient rise in prices; so far, good results. But the farmers are in an unhappy predicament. As some rise in the values of food is inevitable, the wages of the laborers advance in proportion, and the rents of farms must be paid, for the land-owner has a first lien on the crops for his demands. With short crops for some years, the English and French farmers have been brought near, if not quite to, financial ruin. Hundreds of English farmers have become bankrupt, and great distress has come upon the agricultural class. While we can not but sympathize with the sufferers, yet it is impossible to be otherwise than gratified that we are able to supply the needs of the general population, and to avert, by means of our abundant crops, the danger of famine and starvation to thousands of poor people who never know what it is to have more than a single day's supply of food ahead of their wants.

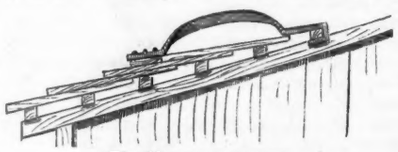


Fig. 10.—HOOK IN USE.

The Plague of Flies.—Some mitigation of the plague of flies, which torments the cattle and

horses in the stables at this season, may be procured, by fumigation, or as backwoodsmen say, "a smudge." A dense smoke may be made by various methods. Dried cow-dung burned upon a pan of live coals, produces a thick, pungent smoke, which will soon clear a stable of the pests. Common tar, burned by stirring it with an iron rod heated to a dull red, so as not to inflame it, will make a thick smoke, which is not only disagreeable to flies, but is regarded as a purifier of the atmosphere, and deodorizer as well. To keep the stables clean and free from strong odors, it is well to use on the floors a plentiful sprinkling of ground gypsum, or a solution made by dissolving one pound of Copperas, in a pailful of water, and freely scattered around, will be a useful disinfectant.

Fig. 1.—THE BOT-FLY.

The Horse Bot-Fly, and Its Ways.

Nearly ten years ago, we gave a history of the Bot-fly, with illustrations; but ten years in the life of a journal like ours, brings an almost entirely new set of readers, and inquiries from recent comers occasionally make it necessary to treat subjects of such general interest as the Bot-fly anew, as the new generation can not be, as a general thing, referred to back volumes. The Horse Bot-Fly, (*Gastrophilus equi*), belongs to the great family of *Diptera*,—the two-winged insects. The most familiar examples of these, are the troublesome horse-flies and mosquitoes. The Bot-Fly, figure 1, is brown in color, and about the size of a honey bee, and when on the wing it might be mistaken for one. The body of the female is more tapering than that of the male, figure 2; she deposites her many eggs singly upon the hairs of the lower jaw, neck, and forward legs of the horse. The long and blunt ended eggs, figure 3, are so securely glued to the hairs, as to be removed with the greatest difficulty. The eggs hatch in a very short time, and the tickling sensation produced by the young maggot, induces the horse to bite and lick the places where they are, and they thus pass into his mouth and stomach. The Bots, as the maggots are called, are short and fleshy, of a whitish color, becoming brown by age. They are provided with hooks around the mouth, and rows of spines about the body, by both of which they fasten themselves to the lining of the stomach, and sometimes to the intestines of the horse. Figure 4 shows a number of these larvæ partly buried in depressions which they have made. After remaining for six weeks or two months, the Bots pass away from the horse, bury themselves in the dung, and assume the dormant pupa state (figure 5), in which they remain until "fly time" comes again.

Fig. 2.—FEMALE.

Fig. 3.—EGGS ON HAIRS.

When the maggots are attached to the stomach in large numbers, they may impair digestion, and in the worst cases even produce death. The common belief that Bots eat through the coats of the stomach is not well sustained. In general they do not *eat* the wall of the stomach but irritate it and cause a formation of pus and other excretions upon which they feed.

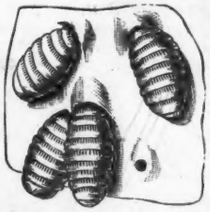


Fig. 4. GRUBS IN STOMACH.

It is difficult to distinguish Bots from other sources of stomach irritation. If the tongue is red, the horse keeps extending its head and raising its lip, and the maggots are found to pass out with the dung, it is a clear case of the Bots. So far as known, nothing can effectually remove the troublesome parasite from its hold when once fastened in the stomach. The various worm medicines are of little avail. The animal must be well fed, and a dose of physic will help remove of the Bots when it is time for them to change their residence.

Fig. 5.

The System of American Agriculture.

We have been repeatedly taunted by foreign agricultural journals about our low average production of grain and other crops, and the very large products of some English farmers have been held up as examples for us to follow. English farmers boast of 60 to 70 bushels of wheat to the acre, and American wheat, averaging a miserable 12 bushels per acre, is sold in the English markets in successful competition with their much heavier crops. Truly, "the race is not to the swift, nor the battle to the strong," but the skillful adaptation of means to ends, and doing the best with what we have, are more conducive to success than brilliant show. It is doubtful if any American farmer could profitably produce 50 bushels of wheat per acre. It is not a part of our system to do that. We can do some things, and having learned what we can do, we have gone to work and done it well. We have learned to work cheaply, and effectively, and the system under which we have worked, wrought out by force of circumstances rather than by choice, has led us to success. The English agricultural journals now no longer slight our averages, but are free to confess that the defeat in agricultural enterprise of English farmers must be "due to causes which are inherent in themselves and in their ways of conceiving and carrying out their work." Probably the cause, or one of the causes, could be pointed out from this side. If American farmers employed laborers to do their work, while they rode out to supervise them and give orders, and twice a year were to pay out to the owners of their farms in rent a sum nearly equal to the average fee simple value of their farms, there might be as bitter complaints and great distress here, as there is just now with them. Our system of agriculture is a simple one. The American farmer is his own landlord, and is not above holding his own plow or driving his own reaper. He is obliged to do this whether he be willing or not; for if he has a good capable workman to do it for him for a few years, this same workman will soon be the owner of a farm himself, and at work on his own account. In this country a farm laborer who remains a laborer, must be a poor inefficient workman, or he would soon be his own employer. The scarcity of labor forces the farmer to use labor-saving machinery, and that cheapens his products. This is our system, and it is one that has given us the control of the world's markets, just now at least, and perhaps permanently. There is nothing for us to complain of in this. On the contrary, it is cause for gratification that, by industry and skillful management, we have succeeded in our business; and it is a warning to us that we must hold what we have gained by renewed industry and economy in our management. We have probably before us a period of small profits, and one calling for close management. We have had our good time in some past years; we must now take our turn of a few lean but still healthful years, which are before, and may soon be upon, us.

A Farmers' Club.—A correspondent informs us that a Farmers' Club has been started at Fairhill, Bucks Co., Pa, on July 10th last, and that it would not have been formed but for the advice given in the *American Agriculturist*. We have just one bit of advice to give now that the Club is formed. Have as few rules as possible, and discuss them as little as possible. There will almost always be in such a body one or two who should be in the Legislature; they are great on the Constitution, and "parliamentary usage," and manage to waste valuable time which should be devoted to agricultural topics. A body of earnest farmers need few if any rules to keep them in order. We wish the Fairhill Club much success, and hope it may not be troubled by these expounders of the Constitution and the law. W. H. Pounds is President, and W. Curtis, Secretary, of this new Society.

A Brace for a Kicking Horse.

Those so unfortunate as to own a kicking horse know something of the patience that it requires to get along with it—and will welcome anything which will prevent the kicking and finally effect a cure. The writer knew a horse, which was so bad a kicker that after various trials, and after passing through many hands, and getting worse all the time, to be perfectly cured in the course of three months by the use of the device here given. This is a simple brace, which acts upon the fact that if the head be kept up, the horse can not kick. A kicking horse is like a balance, when one end goes up, the other must go down. The brace, shown in place in figure 1, and separate in figure 2, consists of a ½-inch iron rod, which may be straight, or for the looks, bent into a graceful curve. It is forked at both ends; the two divisions of the upper end are fastened to the two rings of the bit, while the lower ends fit upon the lower portion of the collar and hames. The upper ends can best be fastened to the bit by winding with wire, which should be done smoothly, so as not wear upon the mouth. The lower end is secured by means of a strap fastened to the upper loop, and passing around the collar is buckled through the hole in the lower part of the end of the brace. The brace need not be taken from the bit in unharnessing. Any blacksmith can make such a brace, taking care to have it of the proper length to fit the particular horse. Keep its head at about the light as when "checked up," and the horse will soon be cured.

Fig. 1.—HORSE'S HEAD WITH BRACE ATTACHED.

Fig. 2.—THE BRACE.

A Talk About Strawberries.

"Hudson's Bay," "Crimson Cone," "Keene's Seedling," "Methven Scarlet," "Baltimore Scarlet," and a few others were the varieties with which our strawberry experience began. It would be difficult to find either of these now. Then came "Hovey's Seedling"—and what an improvement it was upon all others! We had strawberries then with a strawberry flavor, and whoever had the "Hovey" knew what a strawberry should be. We do not often see or hear of this variety now, but where is its equal?—Does the present generation, except those who now and then get a taste of a wild strawberry, know how a strawberry ought to taste? Isn't it about time to give up the musk-flavored berries of the "Triomphe de Gand" order,

or the great, coarse, sour things with no special flavor whatever (we could name a dozen to which this description applies), and try to raise strawberries, not for size, but for quality? As we look back upon the past thirty years of strawberry culture, we can see no improvement in the direction of *quality*. Now and then a variety has appeared, like "Brooklyn Scarlet," "Boston Pine," or "Burr's New Pine," of superior excellence as to flavor, but lack of productiveness, lack of size, or lack of something, has caused them to be dropped from cultivation. Whoever will give us a fruit equal in all respects to Hovey's Seedling, without its faults, will be a benefactor to his race—at least that portion of it who remember how strawberries should taste. With this reminiscence—some of our friends will call it a "growl"—we give a few notes upon some of the more recent strawberries as they have appeared in our own grounds and elsewhere.

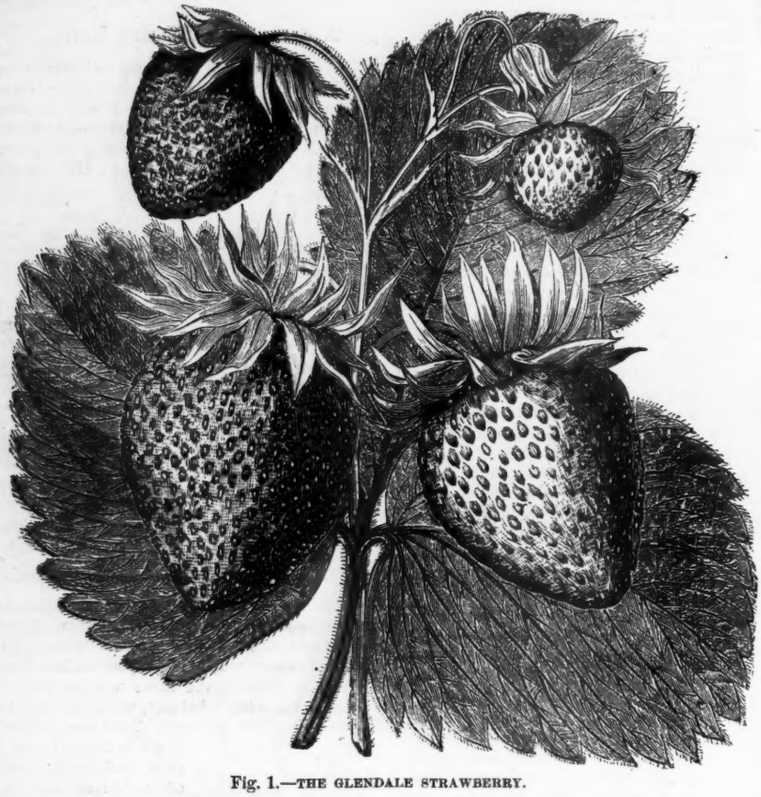


Fig. 1.—THE GLENDALE STRAWBERRY.

Glendale, so-called because it was found as a chance seedling in the Glendale Cemetery, Akron, Ohio. Our first acquaintance with this fruit was through a basket of it brought by J. T. Lovett, from his "Monmouth Nursery," Little Silver, N. J., and we afterwards saw it growing in the grounds of E. P. Roe, at Cornwall-on-the-Hudson, N. Y. The carrying qualities of this variety seemed so marked that the accompanying engraving was made from the specimens, which Mr. Lovett says were from plants in ordinary field culture. The engraving shows the shape and average size, and also, what seems to be a peculiarity, the very ample calyx or "hull." This is thought to furnish protection in case a frost comes while the berries are setting; a sufficient "neck" allows of its ready removal. The color is a rather light scarlet. The plant, with Mr. Lovett and Mr. Roe, is remarkably vigorous, an abundant bearer, with a very strong fruit stalk. As to quality, that depends upon one's standard. As strawberries run, we should say "good," but not "best"; still quite as good as one looks for in a market berry. It has one qualification desirable in strawberries—that of lateness. The "Kentucky" has heretofore been regarded as our latest variety, but in a dry season it ripens almost as early as any. The "Glendale," according to Mr. Lovett (in some notes prepared at our request), in two years' cultivation, is fully a week to ten days later in time of ripening than any of the sorts usually cultivated, such as "Wilson," "Charles Downing," "Monarch of the West," etc. Mr. Roe, in his latest catalogue, says of the berries: "Their firmness and lateness, however, may make them valuable for market."

Sharpless. — No berry of late years has been so generally praised as this, and if it substantiated all that has been claimed for it, it would indeed be a wonder. In our experimental rows, one could pick out the "Sharpless" at a distance, so much larger were the plants than all others. It has not been long enough in cultivation for all its faults to be learned. We can only say that it is of the largest, and the handsomest; remarkably good, as well as unusually firm for so large a berry. It has this past season commended itself for general trial. Grown in separate stools, it promises great results.

Golden Defiance.—This berry, to judge it upon Mr. Roe's grounds, presents the unusual case of a fruit which proves better than the claims made for it. In his specimen bed the amount of fruit was wonderful, the clusters filled out to the last blossom, fruit of good shape, large enough, handsome in color, apparently firm enough for market, and of unusually good flavor. It is one of the later kinds. Taking the plant as we saw it, and its behavior with Mr. Roe in former years under neglect, we regard it of such promise that we give an engraving of an average cluster.

Duchesse is another instance of Mark Tapley's "coming out strong under difficulties." But little has been said about it, and it persists in speaking for itself. On our grounds it was the earliest and one of the most productive of over a dozen varieties. In Mr. Roe's specimen bed, from which no fruit had been picked, it laid in piles, a marvel of productiveness, second only in this respect to

Crescent Seedling.—Probably no strawberry, new or old, can equal this in the quantity of fruit to the acre. When the fruit is grown, we prefer to let some one else eat it. Mr. R. says that "berries that ripen fully in the sun are very good." Our chief knowledge of the fruit is derived from that grown on his ground, "fully in the sun," save that the berries covered up one another, and had he looked at the faces of those who tasted them—including some ladies of excellent taste and judgment—he certainly would have searched for some berries that were ripened "fully in the sun." Still it is so productive that it will prove profitable for a near market, as it looks well; but in quality, as we have seen it, it is even worse than the "Shaker Seedling," which has happily dropped from cultivation.

Forest Rose.—The most beautiful of all recent berries, and as good as it looks. It is of large size, bright color, firm surface, and of excellent quality. It is not so productive at the East as at the West, but with good culture will give good results.

Champion.—When this was first exhibited it was a great coarse, sour fruit, with nothing but size to commend it. It had been grown with an excess of manure. Later, with fair culture, it has proved itself a valuable fruit for market, if not to be carried a long distance, and when fully ripened, a good home berry, and one of the largest of strawberries.

Among the more recent berries which, from their promise the past season, warrant further trial, are President Lincoln, Miner's Great Prolific, Pioneer, Essex Beauty, Cumberland Triumph and Duncan.

The Cup-Plant.

Among the plants conspicuous on the western prairies from midsummer onwards, are the species of *Silphium*, of which there are nearly a dozen. The name *Silphium* has no definite meaning, it being the ancient name of some plant which Linnæus gave to this American genus. One species, *Silphium laciniatum*, is widely known as the "Compass-plant." It has long been known to explorers and others who have travelled over the broad prairies, that the large root leaves of this plant have their

Fig. 2.—THE GOLDEN DEFIANCE STRAWBERRY.

faces placed east and west; and consequently their edges stand north and south. This fact has been denied by those who have observed the plant in enclosed and crowded gardens, but it is well established that on the open prairies, the leaves so generally stand with their edges north and south as to entitle it to the name long ago given it, of "Compass-plant." This and another species (*S. terebinthinaceum*) exude from their stems a resinous matter in the form of drops or tears, on which account

THE CUP PLANT.—(*Silphium perfoliatum.*)

they are termed "Rosin-weeds," and are, in some parts of the country, favorite horse remedies. The species above referred to are rather coarse for ordinary gardens, unless grown as curiosities, but there is one known as the Cup-plant, *S. perfoliatum*, which is sufficiently ornamental to deserve a place in gardens of sufficient size to allow of such large subjects. The Cup-plant throws up numerous stems from a perennial root; these, according to the soil, are from four to six, or even eight feet high. The stems are square, and bear ample opposite leaves, six inches to a foot long. These leaves are curiously united by their lower portions, so that each pair forms a sort of cup which quite surrounds the stem, each joint of which appears to spring from the cavity thus formed. The engraving, much reduced, from the upper part of a stem, shows this peculiar growth of the leaves. The plant is worth growing for this curious leaf structure alone, but it produces a great abundance of flowers which make it ornamental as well as interesting. The heads of flowers are much like those of a small Sun-flower, with numerous bright yellow rays surrounding a greenish yellow disk. It keeps in flower a long time, and is one of those stately, robust looking plants which may be effectively introduced into large gardens where it can have sufficient room to develop itself without encroaching upon other plants. In a small border, of course such vigorous subjects are quite out of place.

Our Native Lilies.

We have, east of the Mississippi, four admitted species of native lilies. Three of which are common throughout the Northern States, and one southern species. These four are naturally divided into pairs, as in two of them, the parts of the flower which commonly pass for petals, are narrowed at the base to form a sort of stem, or *claw*, as it is termed botanically. These two are the "Wild Orange-Red Lily," (*Lilium Philadelphicum*), and the "Southern Red Lily," (*L. Catesbæi*). In these the stems are about two feet high, the flowers are erect, and bell-shaped; the first named has two or three on the stem, reddish-orange with dark purple spots on the inside; the other has a single flower to the stem, which is almost scarlet, and spotted with purple on a yellow ground. The other two have nodding flowers, with the parts not narrowed below, but are turned back, like those of the "Turk's-Cap" lilies of the gardens. Of these two, the "Canada," or "Wild Yellow Lily," (*L. Canadense*) is from two to five feet high, with a few orange colored flowers, with brown spots. The "American Turk's-Cap Lily," (*L. superbum*), grows three to seven feet high, with a pyramidal cluster of many—sometimes 20 to 40—flowers, bright orange-red in color, with many dark purple spots on the inside. Besides these, there has been described the "Carolina Lily," (*L. Carolinianum*,) with few and yellow flowers, but otherwise so like the last named, that it is usually regarded as a variety of it. Of these wild lilies, the first two are most generally found in sandy ground, while the other two grow in rich moist meadows, and low grounds. With the exception of the southern species, they are not at all rare, and some, if not all, may be found in most localities. To those who are fond of cultivating flowers, these offer many attractions; the bulbs may be transplanted with great ease, and in the rich soil of the garden, where they have not been forced from necessity to struggle against a crowd of other plants, they present a luxuriant growth, and an abundance of flowers, only rarely met with in their wild state. Not only do they vary considerably in the number of flowers and their size, but they present a marked variety in their color. In the wild state, our lilies puzzle botanists; we have stated as to the last one, named (*L. Carolinianum*), that it was regarded as distinct from the "Turk's-Cap," (*L. superbum*), by some, while it is, by our best authorities, placed as a variety of that. But a greater difficulty presents itself; plants will occur so evenly between the "Canada Lily" and the "Turk's-Cap," that it is difficult to say to which they belong, and some doubt if the two are really distinct, and if the main difference is not often all one of luxuriance of growth. When it comes to the question of color, the wild plants show the greatest variety. The "Wild Turk's-Cap," is usually described as having orange-red flowers; we have seen them when scarlet, and a deep scarlet would best describe the color. We recently saw in the grounds of Woolson & Co., Passaic N. J., a row of this lily, *Lilium superbum*, containing some hundreds in full bloom. These were from bulbs dug up in the country round about there, and the variety they presented, was most interesting. Some plants were not over two feet high, while others were nearly six feet, and in the number of flowers to the stem, the size of the individual flowers, and especially in their color, and markings, there was sufficient variety to induce some botanists to make many species. While we had seen here and there a few bulbs of our native lilies under cultivation, we never before saw them by the hundred, and we were more strongly than before impressed with the great beauty of these natives of our meadows and bogs, and the inducements they offer to lovers of flowers, to bring them into cultivation. By careful selection, marked varieties

THE COLUMBIAN LILY.—(*Lilium Columbianum*).

may be obtained, and those who would experiment with seedlings, and especially in hybridizing, they present a field in which the amateur may reap rich results. Upon the western side of the continent there are species of Lilies resembling ours, and besides these, several, such as the Washington, and Parry's Lilies, quite unlike our Eastern kinds, and more resembling the exotic species. Among those closely related to our Eastern Lilies is the Columbian Lily (*L. Columbianum*). This, which has been thought to be merely a form of our Wild Yellow Lily (*L. Canadense*), is now regarded by Mr. Sereno Watson, who has given special study to the genus, to be a good species. It is the common Lily of the northern portions of the Sierra Nevada, and is, as yet, but sparingly in cultivation. The engraving here given is from a specimen supplied by the firm above named. It grows from one to two feet high, and has whorls of very distant leaves. Its flowers, from two to five in number, are very small, being only about an inch and a half across; with the parts turned strongly backwards; orange yellow, freely spotted with purple. This is an exceedingly neat and interesting dwarf Lily, which we hope may soon be in general cultivation.

The Money Value of Orchids.—The report of a sale by auction, of a private collection of Orchids, in London, a few weeks ago, gives one an idea of the money value of fine specimens of these charming plants. The whole collection brought

about $11,000. The highest price for a single specimen was about $190, while great numbers were sold at prices ranging all the way from $40 to $60 each.

The American Grape Mildew.

In order to become more thoroughly acquainted with the prevalence of Grape Mildew, the writer, in the summer of 1877, sent a list of questions to the leading grape growers in the country. From the replies, many of which were very full, it was evident that in the *mildew*, the grape growers have a serious and destructive pest. The literature of the subject shows that it is no new thing, and that grape mildew has received considerable attention

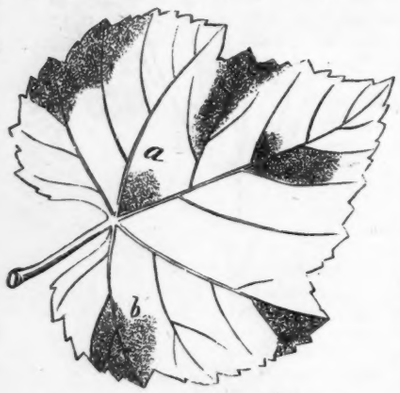


Fig. 1.—A GRAPE LEAF WITH MILDEW.

from horticultural writers. [Just as we are preparing this paper, there comes to hand a quantity of dwarfed, discolored, and worthless grapes, made so by this destructive mildew fungus.] All who have given any attention to the matter, are aware that the mildew is a minute fungus, known to botanists as *Peronospora viticola*. This fungus is best observed on the leaves, where it makes yellowish-brown patches on the upper side, while beneath there is a white forest of the spores. The smooth-leaved varieties show the mildew to the best advantage, as it is not obscured by the dense growth of hairs of the "woolly" varieties. Figure 1 is a view of the under side of a grape leaf, reduced in size, showing the affected portions darkened, *a*, *b*. If a thin cross-section of the leaf is made through one of these mildewed spots, and placed under a compound microscope, we have what is shown in figure 2. (For convenience, the under side of the section is placed uppermost in the engraving.) The threads of the fungus, *c*, run in all directions between the cells of the leaf, and after a short time reach the breathing-pores, or *stomata*, *b*. (An account of these pores is given on page 306, last month.) The threads of the fungus pass out, and reach the air, through these breathing pores of the leaf — often half a dozen from a single "pore"—and branch so as to appear like a miniature tree, *a*. Upon the tips of these branches, the spores, *d*, *d*, are rapidly formed. It is the vast multitude of these little branched tops, with their clear transparent spores, which gives the white, frosty appearance of the infected spots, to the naked eye. Figure 3 shows a highly magnified view of a small portion of a thread of the fungus, *e*, after it has pushed its way between the cells of the leaf, in which is also seen some of the numerous little projections, *i*, *i*, which penetrate the cell-wall and absorb the nourishment. From their function they have received the common name of "suckers." One of the ultimate extremities of a "limb" is shown in figure 4, with its peculiar form of branching, *d*, together with one of the spores, *g*. These are *non-sexual* spores, (see article in July, page 208), and have a peculiar method of germination. The contents of the spore, a few hours after it is ripe, divide into from six to ten oval bodies, *g*, which soon rupture the spore-wall and escape, each provided with two little hair-like processes, *h*, by means of which it can rapidly move about. Here, then, we have each spore producing a number of moving bodies, which, after finding a suitable locality, germinate and reproduce the mildew in a new place, and it may be on another plant.

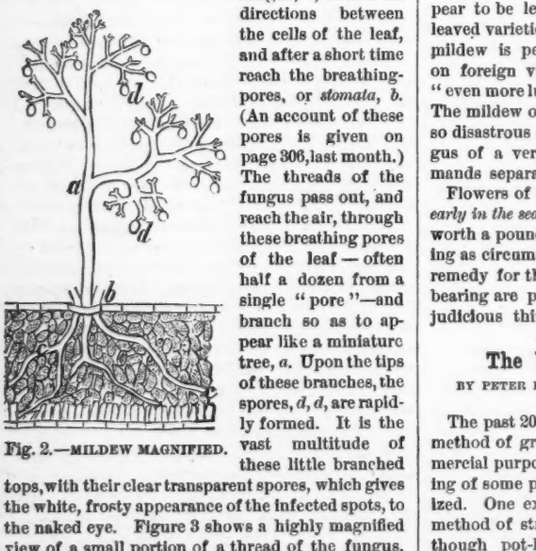


Fig. 2.—MILDEW MAGNIFIED.

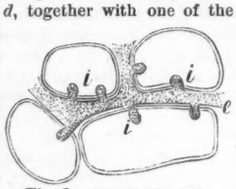
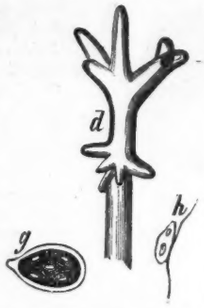


Fig. 3.—FILAMENT AND "SUCKERS."

Besides these non-sexual spores, just described, there is another kind always formed *within* the tissue of the grape plant, and is sexual, as it is necessary that the contents of two different threads should mingle in order that one of these spores may arise. This process is shown in figure 5, the small filament, *a*, representing the male, the contents of which passes into the female cell, *b*, which afterwards forms a sexual spore, *c*. These spores are large, and covered with a thick cell-wall, slow in their formation in comparison with the exceedingly rapid development of the aerial, non-sexual spores. They are only produced late in the season, and serve the special purpose of carrying the mildew over the winter. They germinate in the same way as the small summer spores, by producing a number of motile bodies—which, when finding their way to the grape plant, repeat the trouble of the previous year.



4.—BRANCH AND SPORES.

This Mildew makes its appearance any time from the first of June to the last of September, depending very largely upon the state of the weather—a succession of warm rainy days being the most favorable for its development. We have often been asked what varieties are most susceptible; but the question cannot at present be answered. The strong, thick-leaved varieties, like the Concord, appear to be less affected, while some tender thin-leaved varieties are almost ruined. Although this mildew is peculiar to America, it flourishes upon foreign vines, when brought to this country, "even more luxuriantly than on American species." The mildew of Europe, which, at times, has proved so disastrous in the vineyards of Maderia, is a fungus of a very different kind from this, and demands separate consideration, as we have it also.

Flowers of Sulphur, used with a bellows, (fig. 6), *early in the season*, when "an ounce of prevention is worth a pound of cure," followed by repeated dusting as circumstances of weather, etc., decide, is *the* remedy for the grape mildew. "Early and overbearing are prolific sources of mildew," therefore judicious thinning will do much to keep it off.

The Uses of the Flower-Pot.

BY PETER HENDERSON, JERSEY CITY HIGHTS, N. J.

The past 20 years has shown great changes in the method of growing plants in this country for commercial purposes, and it may be said that the raising of some plants has been completely revolutionized. One example of this is seen in the present method of striking strawberry plants in pots. Although pot-layering of strawberries was begun about 20 years ago, by the late Mr. Knox, of Pittsburgh, Pa., yet it was only done to more certainly increase some of the newer sorts, and not for the purpose of producing plants for general cultivation. Now this pot-layering has become so popular, that an amateur cultivator rarely plants for his own use any other than pot-grown plants. Hundreds of thousands of pot-grown strawberry plants are sold in New York City during the months of August and September to those having gardens in the suburbs. I am so satisfied of the advantages of this plan, that if I were intending to grow strawberries for market, no matter to what extent, I would adopt this method. During the past five years we have never failed to get a *full* crop of fruit from pot-grown plants, if set out before August 15th, and have had a half crop even if set out as late as the middle of September. But it is not alone in strawberries that the flower-pot presents great advantages to the propagator. Grape-vine cuttings put in the propagating greenhouse, or hot-bed, on April 1st, will be ready to pot in a 3-inch pot in May, and these, if shifted into 4-inch

Fig. 5.—FORMATION OF SEXUAL SPORE.

pots in June, will make plants 4 feet high by fall, having their roots a dense mass of fibres. With vines thus grown, both tops and roots are thoroughly ripened, and, when set out either in fall or spring, such plants never fail to start, and make twice the growth that a vine of the same age would have done, if it had been merely lifted from the nursery row without being pot-grown. Moreover, when grown in pots, vines can be transplanted, if desired, during the hottest and driest days of July or August, with perfect safety. The same is true of various other vines, such as all kinds of Honeysuckles, Clematis, Wistarias, and other hardy climbing plants. So with the hardy-herbaceous plants, such as Chrysanthemums, Phloxes, and many others, most of which are now grown in flower-pots, and can be safely transported and set out at any season of the year. Perhaps no plant has been so greatly benefited by the method of cultivation in pots as the Rose. Formerly roses were cultivated in nursery rows, in the open ground, like ordinary shrubs. When wanted to fill orders, roses were lifted from the open ground and packed like other nursery stock. The business of raising roses is almost entirely changed, and those engaged in supplying the demand grow them in pots. It is true that the pot-plant is not so large as that sold from the nursery row, but being pot-grown it has a mass of fibrous roots, and though the plant may not be more than 6 inches high, when put out in May, it will make a larger and better plant by September than the nursery plant that has not been

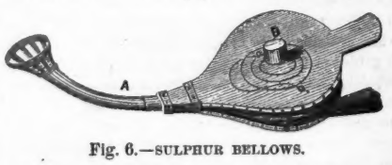


Fig. 6.—SULPHUR BELLOWS.

pot-grown, though that may have been perhaps six times larger when planted. Moreover, in the pot-grown plants, if in healthy condition, there will not be over one per cent that will fail to grow, while the plants from nursery rows often fail largely, even under the best conditions. A rose plant makes comparatively few fibrous roots; it has therefore weaker recuperative powers than most shrubs, and for that reason the thousands who still buy such plants are doomed in many cases to disappointment. Pot-growing is particularly valuable with all plants that make long bare roots, such as the Chinese Wistarias, Magnolias, etc. Many know from unpleasant experience that plants of the Chinese Wistaria 6 or 8 feet long, taken from the open ground, will rarely make much growth the first season after planting, often forming shoots only 6 inches long, and even in the second season the

growth is often small. A plant, if pot-grown, though less than a foot high at the start, will often make a growth of 10 feet the first season. I have advocated this method of pot culture, for all such plants, to florists and nurserymen for the past 20 years, and we are yearly adding to the number of species of plants that we grow in this manner.

A New Raspberry—The Chinese.

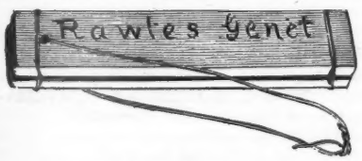
BY PROF. C. S. SARGENT, DIRECTOR OF THE ARNOLD ARBORETUM OF HARVARD UNIVERSITY.

We have cultivated for the last two or three years a *Rubus*, native of Manchuria, Northern China and Japan (*Rubus crataegifolius*, Bunge), with the supposition that it was a Blackberry, and of little horticultural importance or value, except as an ornamental plant of neat habit, remarkable for its rich autumnal coloring. This year the plants have fruited, and it proves to be a true Raspberry. The fruit is large, firm, clustered, nearly semi-spherical, of a brilliant orange-scarlet color, and with a flavor which suggests the common Black Raspberry or Thimbleberry. The largest fruit I have noticed is ⅝ of an inch in diameter, and rather longer than broad. Probably as a table fruit the Chinese Raspberry is hardly worth cultivating, but it is suggested that by using it to cross with some of the delicate garden varieties, a hybrid might be obtained hardier than anything now in cultivation. Such a hybrid might be expected to produce large and very high-colored, handsome fruit, of great substance, and therefore valuable for market purposes. The neat habit, great hardiness, large, brilliant fruit, and especially the rich claret color which its foliage assumes in autumn, render the Chinese Raspberry one of the most desirable of the many shrubs recently introduced from its native countries. [We may expect to hear more from this interesting Raspberry in due time, as we learn that a few *experienced* hybridizers will be supplied with young plants from the Arboretum, to give them an opportunity to test its horticultural value. ED.]

Labels for Fruit Trees.

BY CHARLES DOWNING.

[A Tree-label seems like a small affair, yet to the fruit-grower who appreciates the value of accuracy, it is a matter of no little importance, and a label easily made and applied, and fairly permanent, is so desirable that we have given, during the past few years, all the devices that have been sent us. Some of our correspondents, thinking that we were unacquainted with it, have sent us directions for making the common label: a piece of pine, smeared with white paint, and written upon, while the paint is still wet, with a lead-pencil. This is so old and

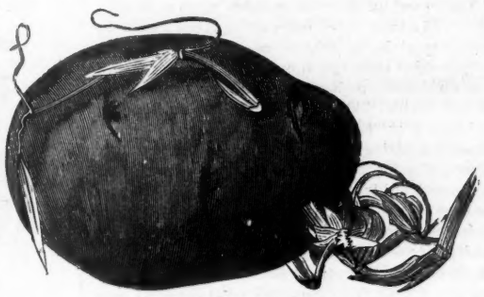


WOODSON'S FRUIT-TREE LABEL.

so generally known, that we regard it as *the* label, in use by every one, and the standard with which all claimed improvements must be measured. Yet there are different methods of making this, the simplest of all labels, concerning which our correspondent, Mr. Charles Downing, writes: ED.] "I have used the wooden label, (spoken of by 'F.,' Clarion Co., Pa., mentioned in the July No., page 253) for many years, and although not perfect, has proved as valuable as any of the many kinds tried, considering the small amount of labor required to prepare them. The label should have a good coat of white paint all over it; and when thoroughly dried, paint one side of the label again, and immediately write the name firmly, with a lead-pencil. When well done, this will last for many years. For a more permanent label, I am indebted to Isaac T. Woodson, Mumfordsville, Ky.; one which I have not seen published. After the labels are prepared and once painted—as above, take two of the same size, paint one side of each, and while fresh, write the same name on each; when dry, put the two labels together—one name inside and the other outside; put a wire over each end of the two labels securely, and suspend the two as one label. When the outside label is obliterated, take off the wires, and you will have the name on the inside as plain as when written. I find annealed copper-wire, No. 20, the best for labels. [To illustrate the label here described, Mr. Downing kindly sends one ready to put upon the tree, which allows us to make the matter plainer by the engraving given below. ED.]

Perforated Potatoes.

Nearly every season, specimens are sent us, showing potatoes, carrots, and other garden vegetables perforated, as it is alleged, by "roots" of some grass. The engraving, of a potato, recently received, will show the general appearance in such cases. The "root" charged with the mischief is not a root at all, but an under-ground stem, called by botanists root-stock, or *rhizome*. Several grasses have these under-ground stems, which grow in a



A PERFORATED POTATO.

horizontal direction a short distance below the surface. They are not, like the above-ground stems, which grow upright, furnished with green leaves, but at their joints, just where leaves start on the above-ground stems, there are large, chaffy scales, in place of leaves, as seen in the engraving. Like an above-ground stem, this one which grows below the surface is made up of joints, which are gradually shorter towards the end, and at the very end there is a terminal bud or growing point. This terminal bud is very sharp in the grasses, and as it is pushed forward by the growth of the stem, it can as easily pierce a potato, as it can force its way through the earth. Two common grasses have root-stocks sufficiently strong to penetrate roots and tubers in this manner; the Mexican Drop-Seed (*Muhlenbergia Mexicana*) and the Couch, or Quack-Grass (*Triticum repens*). The first named of these, though called "Mexican," is very common everywhere, in the older States at least, and is often mistaken for the Couch, or Quack-Grass, on account of a similar habit of growth, being abundantly provided with long under-ground stems. It is a much more slender plant in all respects, and has its flowers in an open panicle, while Quack-Grass has them in a close head like wheat. In the case of the potato here shown, we judge from the size—nothing above-ground being sent, that the mischief is due to Quack-Grass rather than to the other.

Red Paint in Horticulture.—Red paint may be made very useful in a small way, especially in making conspicuous such small articles as are liable to be lost. The handles of trowels, weeding forks, pruning knives, and all such small implements, if painted bright red may be very readily found when dropped in the grass or otherwise mislaid. But flower tubs, hanging baskets, and many other things, which should be as inconspicuous as possible, are now very often painted the most positive and staring red, which makes them appear obtrusive and to force themselves upon the attention, while the plants they hold, and to which they should be secondary, are rendered less noticeable.

THE HOUSEHOLD.

☞ *For other Household Items see "Basket" pages.*

Home Topics.

BY FAITH ROCHESTER.

Suggestions about Carpet-Sweeping.

Sweeping is a good exercise if you can avoid raising a dust. But if you are in need of vigorous exercise of that kind, get a hoe and betake yourself to the potato-patch or corn-field. Sweep carpets gently. Even a rag carpet should be treated with consideration. A severe digging with a stiff broom wears the warp and scrapes out the lint of the rags quite needlessly. Not long ago I heard a woman say that a very stiff broom was needed for sweeping a Brussels carpet. I thought to myself "a stiff broom will never sweep *my* Brussels carpets" (good reason why!), as I imagined the tearing out of the soft tufting of the carpet by the coarse, sharp broom splints. A carpet-sweeper is the best thing for this purpose. It does the work easily and well, and saves dust. A brush of hair and dust-pan are good to use for the nicest carpets, but their use is too laborious for recommendation to a busy housekeeper. If a common broom-corn broom must be used for Brussels, it should be fine, soft, light, and clean. To sweep up threads, ravelings, and other fine litter, many persons wet the broom in clean tepid water, shaking out the water before sweeping with it, just keeping the broom moist enough to wipe up the fine dust and threads, rinsing in clear water and shaking it frequently as the work progresses. Brussels carpets are not suitable for rooms where sewing and baby-culture are going forward. In providing carpets for any room, reason would dictate that they be such as may easily be kept clean; not so dark as to show every dust and thread, nor so light as to be very easily soiled—something which will either let the dust sift through or retain it on the surface, rather than *in* the carpet itself, when to be used in rooms where dust is made.

Care of Carpets.

To make sweeping an easy task, get carpets of a kind that are easily swept, then save them from unnecessary litter by care about scattering fine chips or crumbs of wood, cloth, paper, or food. Eating should be done in rooms easily cleaned, with carpets of oil-cloth, or similar material, or with bare floors, or with a linen crumb-cloth spread upon the carpet underneath the table. Children should not be allowed to run about the house with pieces of food in their hands. If their food is not all taken at the table, the child should be obliged to sit still somewhere, catching its crumbs upon a napkin, bib, or apron, instead of dropping them upon the floor. Children who learn "to save mamma trouble," and so get at least a smile of gratitude from her for their thoughtfulness, are far happier than those who are not trained to care, but are allowed to make themselves a general nuisance among orderly people. If they wish to whittle, or to cut paper or dolly things, in your best rooms, you need not necessarily refuse them. Spread a large cloth or newspaper down to catch the chips or clippings, and see that it is safely emptied so soon as the child's work is done. Grown up people are sometimes very annoying, because of their lack of this kind of early training. They pull flowers to pieces in your parlors, whittle on your smoothly-shaven lawn, scatter fruit peelings and cigar stumps about the yard, scribble on the covers of your magazines and margins of newspapers, and scratch matches on the walls of the house, or leave disagreeable marks of some kind in every possible place.

The Choice of a Broom.

After the carpet and the care, next comes the broom—soft and limber, and not too large and heavy. I always send for light brooms now, having found how much more strength it uses up to wield a large and heavy broom. Besides, except for scrubbing, I want a broom to use gently. A short, quick stroke takes all the dust along before it, and does not send it flying all over the shelves, pictures, etc., so that much that you have stirred up and set flying about settles back over the carpet

again. Keep the dust low, sweeping just hard enough to move it quickly along before the broom. If you have a very dusty room to sweep, cover the furniture, or that which is upholstered, and the shelves and tables with books or small articles upon them, and afterwards shake the covers out of doors. Then, when you do the dusting, if the carefully swept carpet shows a fine coating of dust settled back upon it, you can if you choose wipe it over with a large clean cloth; shaking it out of doors.

Bare Floors—Bless them!

that is, when they are clean, and I don't have to do the scrubbing myself. I do like clean bare floors in summer, especially when I am a little girl with bare feet—well, they should be swept in the direction of the grain of the wood. Of course this takes all of the dust out more thoroughly, as all of the little cracks in the wood, as well as the long cracks between the boards, run that way. When the boards have shrunk apart it is often a tedious matter to keep the cracks clean, but this ought to be done—and "not leave the other undone,"—that is, the child training and the reading, and the posies in the window, not to mention the cooking, and washing, and ironing, and sewing, etc. Learn to sweep with a broom held straight, so that it will not wear one-sided. Never set it down on the brush end, but either hang it by a string or stand it brush end up where it can not be knocked down.

Mending the Clothes-Boiler Again.

The last time, the leak was right in the soldering on the outside of the boiler, where it had been mended along the outer lower edge next the stove. I suspect that this came from setting the boiler upon the too hot stove, right side up, to dry before putting it away. A boiler ought to be washed and wiped carefully, and then exposed to the hot sun, or turned *bottom* upwards across one corner of the stove in which there is only a very moderate fire, for a few minutes until perfectly dry. This drying will prevent rusting, and most leaks come from rust. Turn it across a corner so that the handles may not be melted off if you should forget to remove it from the stove at the proper time, or if the fire should be hotter than is proper. But if you do get a leak in the soldering, so that a fine stream spurts out from the full boiler, of course you can't stand there all day and hold your finger on the spot, especially after the water boils. Well, then, you can do as I did. I drove a very small tack—the very smallest kind—gently into the hole until it filled and stopped it entirely. One day when there was a leak along the same seam, though in a different place, I mended it with plaster of Paris. A very little, mixed with just enough water to thoroughly wet it, and quickly applied, sets firmly into the crack as it dries, and answers the desired purpose, at least, for a time. It should, of course, be done when the boiler is empty and dry.

Easels as Ornaments.

Within a few years the painter's easel has become an important aid in ornamenting rooms. It is not especially decorative of itself, but it is largely employed for the display of ornamental objects. We find it in use, of the full size, for the support of a choice painting, or select engraving, in a favorable light; of less than half size, to stand upon a table and hold small pictures or some choice illustrated work, down to miniature easels, a few inches high, to place upon the mantel-piece, a bracket, or elsewhere, to hold photographs, choice bits of china, or other article of ornament, that may be best shown in the position allowed by the easel. In making an easel, whatever its size, there is the widest choice of material. A large easel may be of pine, to be painted and decorated in a variety of styles, or it may be of costly woods, and these admit of a variety of ornamentation in the way of carving, and they are often susceptible of high polish. With small easels, where strength is not needed, a variety of materials may come into service; pine stems, reeds, rattans, rough twigs of the elder, and various other shrubs, and we have seen quite small ones made from twisted wires. Whatever the material, or the size, the structure of the easel is essentially the same. The engraving, fig. 1, shows a method of making that will answer for both large and small sizes. Six strips or pieces are needed; two serve for outside uprights, two for cross-pieces above and below; a center upright strip between the two cross-pieces, to add to the firmness, and a strip as long as the two outside pieces to form a third leg; this, in a large easel, is firmly attached to the upper cross-piece, by means of a hinge. Of course, when much weight is to be borne, the parts should be firmly put together with screws, or the pieces, where they cross one another, may be halved together and glued, and the joints strengthened by means of wooden pins put in with glue. In a large easel, holes are made at about six inches apart in the side pieces; these are to hold large-headed pins, which may be of wood or metal, upon which the picture rests, and this may be held at any desired hight by placing the pins higher or lower in the holes. In small easels, this contrivance for raising and lowering the picture, or other object, is not needed, as the lower cross-piece is at a convenient hight, and in this are placed the pins as shown in the engraving. The pieces for a small rustic easel may be split, each being a half cylinder, and put together with tacks, or what is preferable in such work, fine copper wire, which can be managed to appear very neat, and be at the same time strong. The leg-piece, in a small easel, is best attached by wire. Among the recent novelties, that the mania for "decoration" has made popular, are "picnic plates." These are very thin plates, turned from wood; they are very cheap, answer all the purposes of plates at a picnic, and do not break. The cheaper kinds are made of basswood, or some light colored wood, while others, of beautifully marked Bird's-eye Maple, and more choice woods can be had for a little more. It is a pleasant custom with those ladies who are handy at decorating with the brush, to take the plates of the gentlemen, and embellish them with some design commemorative of the occasion, which of course the owner of the plate will duly treasure. We have seen such plates made into remembrances of an autumnal picnic, by exquisitely painted representations of autumn leaves. Plates thus embellished show to excellent advantage supported upon a small easel on the mantel-piece. Figure 2 shows how one of these plates was converted into a "trophy" for a smoker. Whether it was to remind the recipient that he made himself annoying at the picnic, or to commend him for abstaining from his favorite pipe on that occasion, we can not say. At all events, his picnic plate was converted into a really decorative trophy. Two eagle-clawed clay pipes, with their stems crossed, are attached to the plate by means of very fine wire, passing through, and twisted on the back. A neat ribbon bow appears to tie the pipes together. Between the bowls of the pipes is a group of leaves, and above a cluster of moss roses, all delicately painted.—This will serve as a hint to those who would convert such plates into "trophies"—those skilled in painting will find them to furnish an excellent material on which to sketch in colors.

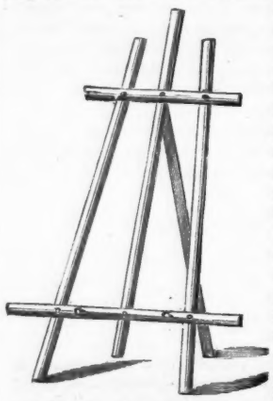


Fig. 1.—EASEL FRAME.

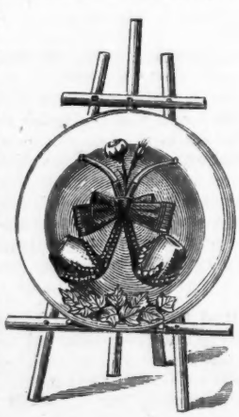


Fig. 2.—EASEL WITH PLATE.

A Cheap and Neat Paper Rack.

The accompanying engraving shows a paper rack which is easily made from such a box as the dry-goods stores are very willing to part with. A paste-board box, about one foot square and six inches deep, will be a convenient size. One end of the box proper is cut down along the corner, where it is joined to the sides, and is turned down in line with the bottom. This piece, when the square corners are cut off, in any way that suits the taste, forms the top of the rack, *a*, in the middle of the upper part of which one or more holes are made by which the rack is hung to the wall. The other three sides, *b*, (the other two hid from view in the engraving) are cut down to about two inches, this depending somewhat upon the size of the box. The cover, *c*, is then fastened to the newly fashioned bottom by a number of ribbons, as shown upon one side in the engraving. Here again the taste may be exercised as regards the size and color

A CHEAP PAPER RACK.

of the ribbon, and the number of ties. If preferred, a piece of thin leather, or even strong cloth, can be used to keep the two parts together. The cover and sides may be decorated with small pictures, or in any manner that may be desired. These general directions will allow one to make a useful paper rack, or "catch-all," at a very slight outlay.

The Buffalo Moth.

First; As to Its Name.—The ordinary Clothes Moth is the caterpillar of a true moth—or "miller" as it is popularly called. Butterflies and Moths make up the order of *Lepidoptera*, or scaly-winged insects. The wings of these are covered with minute scales easily removed by a touch, which are beautiful objects under the microscope. Butterflies fly in the day, and have their antennæ or feelers straight, stiff, and with a knob upon the end, while moths fly mostly at night, and have their antennæ or feelers taper to a point. The term *moth* has, to the entomologist, a definite meaning. The destructive caterpillar, which has received the name of "Buffalo Moth," is not the larva of a true moth, but of a *beetle*, an insect belonging to an entirely different order, the *Coleoptera*, which, for the most part, have a pair of delicate wings quite enclosed, when at rest, by a pair of generally very hard and horny or leathery wing-cases. The Lady-birds, the Rose-bug, the June-bug, etc., are common examples of this class. We do not wonder that an eminent entomologist wrote us that, "when you speak of the Beetle of the Buffalo Moth, you puzzle us old-fashioned bug-ologists." But the name "Buffalo Moth" is,

among house-keepers, so thoroughly attached to the creature that causes so much mischief, that, however incorrect it may be entomologically, the attempt to give it any other name, such as "Carpet Beetle," will be fruitless. In the popular mind, the Clothes Moth is the caterpillar that does the mischief, and not the perfect insect, as that is generally called the "Moth Miller," indicating that it is something that belongs to the moth. So when we mentioned "the beetle of the Buffalo Moth," we did so in a popular sense, meaning the perfect insect of the caterpillar so destructive to carpets, etc.

Second, What Is the Buffalo Moth?—Like the Clothes Moth, this insect is mischievous only in its larval or grub state. The magnified "moth" is shown in figure 1; its length (shown by a line at the side), when full-grown, is about three-sixteenths of an inch, but, including the hairs, considerably longer. It is clothed with brownish hairs, those on the sides being in tufts, and at the tail end they form a sort of pencil. It is probably this shagginess, with nearly black hairs, that gave it the name of "Buffalo Moth." Upon its underside are six small legs, which allow of rapid movement. The grub, when full grown, enters into the pupa state, and remains dormant for some time; in a few weeks the skin splits, and the perfect insect, or beetle, comes forth. The beetle is shown in figure 2, considerably magnified, its real length being indicated by a line at one side. It is about one-eighth of an inch long, and is marked with black, scarlet, and white. The edges of the wing-covers, where they meet, are bordered with scarlet, making a central line of that color down the back; there are other red markings and three white spots on the outer border of the wing-covers, the rest being black. The perfect beetles appear at various times during the fall, winter, and spring, and, in the spring at least, are found on spiræas and some other common garden flowers.

Fig. 1.—BUFFALO MOTH.

Its scientific name is Anthrenus scrophularia. It is a native of Europe, and is supposed to have been imported in foreign carpets—an additional argument for the encouragement of home manufactures. It is a close relative of *Anthrenus muscorum* (or *A. varius*), a well-known and dreaded pest in museums.

Its Introduction.—The Buffalo Moth appears to have first attracted attention in the year 1874—various newspaper accounts appearing before the insect came into the hands of entomologists; it seems to have been noticed in the Western part of the State of New York, and in Winconsin about the same time. In 1876, it was reported as especially abundant in the city of Schenectady, and lately Poughkeepsie and other cities along the Hudson have been destructively visited by it. Lately its spread has been most rapid, as we hear of it from nearly every Atlantic State, to those of the far West. The cabinets of Entomologists have contained, for several years, *Anthrenus lepidus*, from beyond the Rocky Mountains; this, we are informed by that careful entomologist, Mr. A. S. Fuller, is now regarded as a mere variety, differing somewhat in color from the "Buffalo" beetle; it is common in California, Oregon, etc., and is supposed to have been introduced by the Spaniards.

How It Works.—Its destructiveness has been especially manifested upon carpets, hence it has been called "Carpet Beetle" and "Carpet-bug." It works under the edges of the carpets, making large holes near their margins. Where there are cracks between the floor-boards, it will sometimes follow these, as they offer hiding places, and working along them cut off whole breadths of the carpet as if it had been done with shears. But it does not restrict itself to carpets; woollen articles of clothing, whether packed away or hanging up, are attacked by it, and it seems to fancy feathers as well as wool. The specimen from which figure 1 was drawn was captured by one of the officers of the Orange Judd Company upon a child's hat, in the trimming of which some feathers were used. The hat had been put away in a box, and when taken out this summer, all the feathers were completely destroyed. According to some accounts, this insect has taken possession of houses that have been closed for a year, or more, during the absence of the family, and the havoc they have caused has been most disastrous.

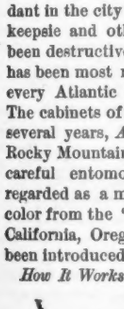


Fig. 2. PERFECT INSECT OF BUFFALO MOTH.

The Remedies.—We have several times given the most effective—laying a wet folded sheet along the edges of the carpet, and passing hot irons over it, to liberate an abundance of steam, which, penetrating the carpet and the cracks below, will kill the moth. Where the insects can not be readily picked from articles of clothing, these may be put into a tight box, or a close vessel, such as a wash-boiler, and benzine poured over them; the vapor of the benzine will in a few hours destroy all insect life. Before carpets are laid, the cracks in the floor, and especially between the base-board and the floor, which are favorite retreats, should be closed, if small by putty, or if wide by plaster of Paris; we have no doubt that hard-soap would be of service for this purpose. Wherever the beetles are found, and, according to Doct. Lintner, they often gather upon the windows, whether found here, or upon spiræas and other garden flowers, they should be destroyed in spite of their beauty. The beetle, figure 2, is from one of Prof. Riley's figures, and we are indebted to notes kindly furnished by Mr. A. S. Fuller, and an article by Doct. J. A. Lintner in the Report of the N. Y. State Museum of Natural History for some facts in the history of this insect.

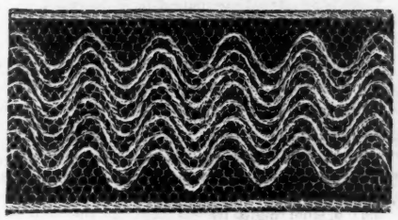


Fig. 1.—WAVE INSERTION.

Easily Made Insertions.

The engravings here given, are from specimens of Insertion sent us by Mrs. "E. M. S.," Passaic, N. J. We have selected four kinds from among the many patterns, and show them of actual size. *Insertions* being the accepted name for an ornamental fabric, put between the portions of a garment, the use of them will be understood. The groundwork of these Insertions is cotton mosquito lace, which may be obtained at the dry goods stores of any size or mesh to suit the taste. The size shown in the engravings, is perhaps the most convenient to work upon. The thread used in these, is the double and single "A" brand. Figure 1 is a graceful waved design, made by passsing the needle

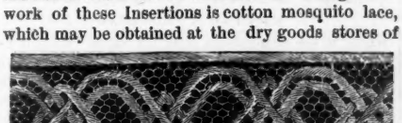


Fig. 2.—A LOOP PLAN.

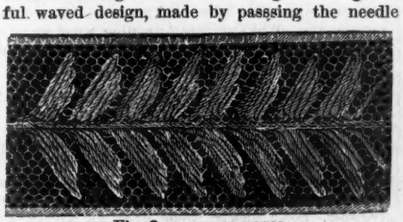


Fig. 3.—A VINE FORM.

—which should be a large one—through the meshes of the lace, in a curved line. Figures 2 and 4, are made with a larger thread. In figure 3, a diagonal loop is formed, making a vine-like figure, with a central stem. Much more elaborate designs are made—in fact, the limit to this work depends only upon the patience and ingenuity of the designer.

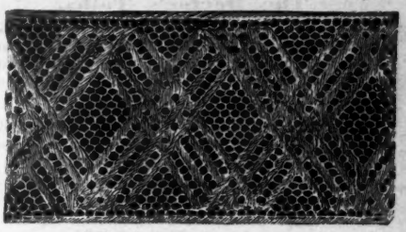


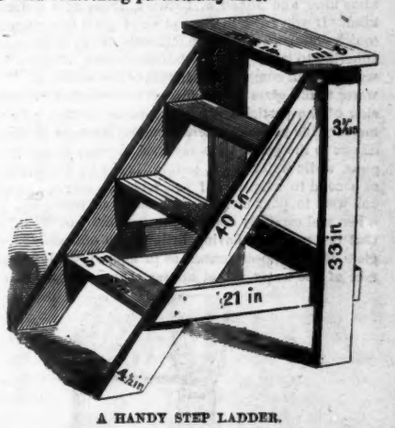
Fig. 4.—DIAGONAL DESIGN.

Those here given, are of the more simple kinds, easily and rapidly made, look neat, and are durable.

Some Recipes from Michigan.

The following recipes come from a house-keeping friend in Michigan, and have the merit of having been thoroughly tested:

SNOW PUDDING.—Soak half a box of Gelatine in half a cup of cold Water half an hour. Then pour on half a pint of boiling Water; add 2 cups Sugar and the juice of 1 Lemon; when the mixture is cold, add the whites of 3 Eggs, and beat all together 1 hour. Then make a custard of 1 pint Milk, the yolks of 3 Eggs, 2½ tablespoons of Sugar; set on ice until cold; when wanted for the table, flavor the custard with Lemon, and pour over the molded pudding.—I beat one hour, or until it is done, which is shown by its piling up like foam. This pudding is a very beautiful dish, and one that I make when I wish something particularly nice.



A HANDY STEP LADDER.

WHITE SPONGE CAKE.—1½ cup Sugar (pulverized), 1½ cup Flour, 1 tablespoonful Baking Powder, 1 do. of Corn Starch. Sift the ingredients together, and stir lightly into the thoroughly beaten whites of 10 Eggs. Flavor to taste. Bake in a deep tin, with a paper on the top.

COFFEE CAKE.—1 cup cold Coffee, ⅔ cup Butter, 1 cup Sugar, 1 cup Molasses, 1 teaspoonful Soda dissolved in the coffee, 1 Egg, 1 cup Raisins, 1 teaspoonful Cinnamon, 1 do. Nutmeg. Flour enough to make a batter so stiff that the fruit will not settle. Bake in a slow oven.

WHITE CITRON CAKE.—2 cups Sugar, ½ cup Butter, whites of 4 Eggs, 1 cup cold Water, 3 cups sifted Flour, 2 teaspoonfuls of Baking Powder, 1½ teacupful of sliced Citron. These are to be mixed as follows: work the butter and sugar to a cream, add the water; then 2 cups of the flour, and half the egg, which has been beaten to a froth. Stir this well some time, then add the rest of the flour, into which has been mixed the baking powder, and lastly the remainder of the beaten egg. When all has been beaten well, add the citron and beat again.

Another Step Ladder.—"E. M. F.," Lansing, Mich., sends us a drawing of a step-ladder, or "steps" as it is usually called. The engraving speaks for itself, as the length, breadth, and thickness of all the parts are given.

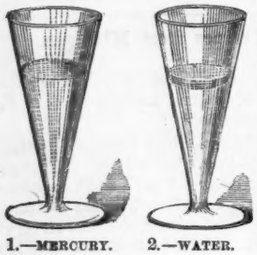
BOYS & GIRLS' COLUMNS.

The Doctor's Talks.

In our last "Talk" about matter and its properties I had something to say about *Capillary Attraction*, and I hope you have kept in mind what was there said, as I wish to have some more talk about this same

CAPILLARY ATTRACTION.

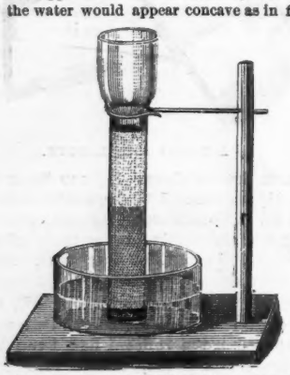
There is so much to be said about *matter* and the *forces*, that you may think I am getting along at a rather slow rate. But I do not think it well to go too fast, and it is better to learn one thing well, than to have a mere smattering knowledge of many things. Though I told you last month about Capillary Attraction, I wish now to show you some of its applications, and how, without knowing—or thinking of it, we daily make use of it. You will recollect that this force received its name from *capillus*, a hair, because it was first noticed in very small and hair-like tubes; but it was shown that it was exercised by any surfaces that were wetted by liquids, as seen by the experiment with two pieces of window glass. There is one point that I should have stated more distinctly last month—it is this: for Capillary Attraction to take place, the liquid and the solid should be of a kind that one will adhere to the other. You must look to last month's talk for the



1.—MERCURY. 2.—WATER.

DIFFERENCE BETWEEN COHESION AND ADHESION.

Briefly—*cohesion* takes place between particles of the same kind, and *adhesion*, between those of a different kind. If you were to dip a piece of glass into mercury (quicksilver) it would come out without any of the metal adhering to it; if you dip the same piece of glass into water, it will come out wet; that is the adhesion of the water to the glass was sufficient to overcome the cohesion of the particles of water one to another. In the mercury the particles *cohere* together, stronger than they *adhere* to the glass. We say that mercury does not *wet* glass, while water does; *wetting* is due to the adhesion of a solid to a liquid. If you had two narrow glasses, and were to pour mercury into one, and water into the other, and carefully observe the surfaces, you would see that the mercury, having little or no adhesion to the glass, would appear convex as in figure 1, while the surface of the water would appear concave as in figure 2,



3. SOIL EXPERIMENT WITH CAPILLARY ATTRACTION.

there being an adhesion between it and the glass. You can not expect Capillary Attraction to take place unless

THE SOLID CAN BE WETTED BY THE LIQUID.

The fibres of a piece of cloth present numerous surfaces close to one another, and if you put the end of a towel, for example, in water, the liquid will rise up through the texture of the towel. Should you carelessly leave your towel so that one end is in the water of the wash basin, and the other hangs down over the edge, the basin would after a time be emptied, the water rising through the towel and finally dripping upon the floor.

THE USE OF BLOTTING PAPER

to take up an ink spot, is an illustration of the utility of Capillary Attraction. You know that blotting paper will take up the ink and that letter paper will not. You know that you can write upon letter paper, but upon the paper used for newspapers you can not usually write on account of the spreading of the ink. Why is this? Blotting paper and most printing paper are *porous*, *i. e.*, there are open spaces between the fibres of which they are made, and the surfaces of these fibres attract the ink; take it up by Capillary Attraction. The writing papers and the finer kinds of printing papers are *sized*, that is, have the spaces between the fibres filled up with glue, and there is no chance for the ink to enter and spread.

A LAMP WICK

was mentioned last month as a daily—or rather nightly illustration of this force—Capillary Attraction, the spaces between the cotton fibres of the wick, acting in the same manner as minute tubes, and bringing the oil up to the surface. The same thing takes place in the candle, when the heat of the flame keeps a little of the tallow, or other material, melted, so that it can rise in the wick and be burned. If you have a piece of rattan (which is the slender stem of a kind of Palm growing in tropical countries) and cut a piece between the joints five or six inches long, and put one end of it in a phial containing kerosene, after a while the kerosene will rise through the rattan, and may be burned there as if the stick were a wick.

THE STEM OF THE RATTAN,

though hard and polished on the outside, is very porous within, and contains numerous minute tubes and spaces through which the oil can rise by Capillary Attraction. There is one thing to be noticed in all the illustrations of Capillary Attraction; however high it may be raised,

THE LIQUID NEVER OVERFLOWS.

For example, if you have a glass tube so fine that water will rise in it for six inches, if you make the tube four inches long, the water will rise to the top, and stop; the same would occur if the tube were an inch long, the attraction carries the liquid to the top, but there is no overflow. It is fortunate that this is so, or we should be obliged to take the wicks from our lamps every day! But if when a capillary tube is full, we remove the liquid from the top, more rises to take its place. In the lamp wick, we remove the oil from the top by burning it, and so long as any remains in the lamp, it rises to take the place of that burned away. But I have left the most important of the many uses of Capillary Attraction to the last.

THE CAPILLARY ATTRACTION OF THE SOIL

is of the greatest importance not only to the farmer, but to all who live upon the earth. Did not the soil possess this property, vegetation could not live, and the earth would be a desert. You can make an experiment showing the action of this force in the soil, if you have any piece of glass tube, such as a broken lamp chimney; tie a piece of muslin or any thin fabric over the lower end, and then fill the tube to near the top with sand, or sandy soil, (any other soil will answer, but these operate more rapidly,) that has been thoroughly dried by being spread in the sun. Place the lower end of the chimney in a dish of water, and hold it in an upright position, as shown at figure 3, or by any other contrivance that will keep it from falling over. The water will be seen to gradually rise in the tube, and its progress may be seen by the darker color of the wetted soil, as seen in the engraving The water rises here by Capillary Attraction; the particles of the soil, present surfaces which act like minute tubes, or like the plates of glass shown last month. Just what happens in this tube, happens over your whole farm—in fact over the whole earth. As the sun and the winds dry the surface soil, and the growing plants evaporate great quantities of moisture from the surface of their leaves,

WATER RISES FROM BELOW,

where it has accumulated from the rains. Were it not for this, so soon as the soil within a short distance of the surface had dried out, the plants would wither and die. But as it is, as the upper soil becomes dry, the water rises from below, and it is only in a very long drouth that the supply is exhausted and the plants suffer. Thunder storms and torrents of rain are noisy, and we notice them when they bring needed water to the soil, but here is a still, small force, constantly at work, bringing life to our crops from far below the surface. We do not see it, seldom think of it, yet keeps on, like many other blessings, whether we are thankful for it or not. You will learn that, as the most noisy people are not those who do the most, so the grand and noisy forces are not the only ones that we should admire. This quiet rising of the water in the soil by Capillary Attraction, when we think what it does for us, becomes one of the grand phenomena.

The Doctor's Correspondence.

WHY SOME LETTERS ARE NOT ANSWERED.

It sometimes happens that my young friends forget that a number of weeks must pass between the time at which they write and that at which an answer can reach them through the paper. This must happen in a monthly paper. Some answers would be all too late to be of use, and I do not give them. For example, a boy wrote me that he had found the cocoon of an insect and asked what he should do to make it hatch. From the description I knew that the insect would come from the cocoon long before he could get my reply, and I did not give it.

THERE IS ANOTHER REASON

why letters are not answered. I have just torn up a dozen or more that had no signature—that is, no name to the letter. I have stated many times that it is very improper to write a letter and not sign it with your own name. It is well to learn this while you are young, and *never* be so impolite as to address a letter to another without putting your name to it.... "H. D. B.," Ingham Co., Michigan, would like to know about

THE GAME OF "AUNT SALLY."

It is not much of a game, but a sort of rude sport. In England, at races, fairs, and at other gatherings, various outside amusements are provided by those who make it a business, just as around our fairs there will be Flying Horses, Fandangos, "Test your Lungs" affairs, "Weigh you for a Cent" chaps and others. "Aunt Sally" is very common there, and I have now and then seen it in this country. The "Aunt" is mostly all head; a roughly carved wooden head is fastened at the top of an iron rod, the other end is stuck in the ground, to make the head about three feet high. The face is rudely painted, usually black, and where the mouth should be, a hole is bored in which a common clay pipe may be inserted. This is all that is really needed to make an Auntie, but she is often furnished with a kind of skirt or frock, and a cap made in an extravagant style. Figure 1 shows the anatomy of the old lady, and figure 2 gives her dressed for company. Each of the players has three sticks, or clubs, about a foot and a half long; he stands at a line marked at 10 or 12 paces from the figure, and throws

"AUNT SALLY" BEGUN AND COMPLETE.

the sticks in such a manner as to break the pipe if possible. The players pay a small sum for their three chances, or shots, but whether they get anything if they hit the pipe. I don't know. Indeed I do not know the rules of the game, not having had the pleasure of seeing Aunt Sally except at times when no one was playing...."How to capture it?" is a question "G. C." asks

ABOUT A HORNET'S NEST.

I never tried but one, and will tell him how I managed that. My horse one day, some years ago, was hitched at a post under a tree. "Jock" was not noted for his activity, but upon this occasion had enough of life to make up for several years of laziness. He was being stung by hornets, and it was no little trouble to get him out of their reach. Upon search, there was found in the tree a hornet's nest, larger than a "stove-pipe hat," that had not before been noticed. The Hornets must be disposed of, or there would be daily trouble for Jock. Brimstone (sulphur) was melted, a rag made into a roll, tied to keep it in shape. This was dipped into the melted brimstone, and when cool, there was a brimstone-match, in size between a lead-pencil, and the little finger, and three inches or so long; this was fastened, by means of a fine wire, to a stick long enough to reach the nest, and we were ready. When night came, and all was quiet, the end of the match was lighted, and presented at the Hornets' front door. They had their *match*, for I doubt if a single one of the hornets in that particular nest ever stung after that; the cure was complete.

Our Puzzle-Box.

DOUBLE ACROSTIC.

My initials spell the name of a territory; my finals give the name of a city in the same.

1. A garment.
2. A water animal.
3. A man's name.
4. Frequently.
5. An actress.
6. Encircling.
7. A goddess.
8. Peculiar.

DENVER, C. T.

NUMERICAL ENIGMAS.

1. I am composed of 25 letters:
My 2, 1, 23, 15, 12, 6, is a symbolical name for Samaria.
My 5, 12, 15, 18, 13, 19, is a Jewish measure.
My 11, 7, 2, 17, 21, 13, is used in making bread.
My 16, 11, 10, 9, 4, 3, is a mountain in Palestine.
My 22, 10, 14, 8, 24, 13, was a Judge of Israel.
My 25, 2, 3, 20, 12, 13, was miraculously destroyed for his sins.
My whole is a Scriptural Command. ISOLA.

2. I am composed of 26 letters:
My 6, 9, 13, 18,—the cubical base of a column.
My 19, 21, 8,—a flock of pheasants.
My 22, 5, 10, 3,—in Persian mythology, an imaginary fairy.
My 1, 11, 3, 12,—an ancient law term.
My 26, 16, 5, 15, 20,—to withdraw.
My 7, 23, 24, 14,—name of a timid quadruped, also a constellation.
My 17, 3, 2,—a Hebrew measure of liquids.
My 25, 10, 3,—a prefix.
My whole is a motto. SPHINX.

3. I am composed of 13 letters:
My 8, 11, 3, 1, is a metal.
My 9, 10, 11, 5, 13, is an article of furniture.
My 7, 6, 12, 13, is a number.
My 9, 4, 2, is a title.
My whole is a celebrated Eastern traveller. E. J. K.

CROSS-WORD.

My first is in slender but not in thin,
My next is in metal but not in tin,
My third is in whole but not in part,
My fourth is in picture but not in art,
My fifth is in stocking but not in shoe,
My sixth is in purple but not in blue,
My seventh is in kitchen but not in room,
My eighth is in cloth but not in broom,
My ninth is in dish but not in spoon,
My tenth is in planet but not in moon,
My eleventh is in many but not in throng,
My whole is a power that's mighty and strong.
ALBERT.

PI.

Wons si cagenodel pavoru. chiwh dulwo veah morfed arin; tub hotgurh het locsends fo het ira, sha eben rofnez ni sit scented, tino scaryinlet froms.

ANSWERS TO PUZZLES IN THE JULY NUMBER.

ABBREVIATIONS.—1. Jewel—ewe. 2. Larch—arc. 3. Pa.ha—ash. 4. Snipe—nip. 5. Steam—tea.

SQUARE WORDS.

1. EDNA	2. CLAM
DRAW	LANE
NAIL	ANNA
AWLS	MEAL

ALPHABETICAL ARITHMETIC.—209)7651483(36609. (*Key—My clean pig.*

CONCEALED FLOWERS.—1. Peony. 2. Harebell. 3. Iris. 4. Rose. 5. Daisy.

GEOGRAPHICAL BLANKS.—1. Lookout, Flattery, Disappointment. 2. Horn, Fear, Clear, Sable, Wrath.

REVERSED WORDS.—1. Madam, Anna, Ada, Eve, Sis, Ewe. 2. Redder. 3. Asa, mum, deed. 4. Deified. 5. Level, eye.

DROP-LETTER PUZZLE.—"Agriculture is the most healthful, the most useful, and most noble employment of man."

NUMERICAL ENIGMAS.—1. He preaches well, that lives well. 2. Pride of China.

CROSS-WORD.—Agriculturist.

What the Duckling Might have Thought.

"Who would have thought that I came from such a dark and unpleasant world as that! For long, long, days—they seemed like weeks—I was crowded down with my head and feet together, until I thought I should smother; and so warm too, with not a breath of air. When the light of this new world broke upon me it almost dazzled

THE OLD WORLD AND THE NEW.

my eyes, but I felt the joy which comes to those who, having lived in darkness, are suddenly set free. I stand upon the shore of a newly discovered world (water in the distance); but, unlike Columbus, I will not return to my old home to be there cast into prison and bound in chains. No power *could* put me back where once I lived. I'll fly and swim, and wade, and be free. Look at these wings of mine; they are to beat the air, and these feet, to move the waters! Farewell, old empty and lifeless world! I go to see what this new life has in store for me."—It went. And many months afterwards the people said that they had not tasted a nicer, more tender duck.

Growth Under Difficulties—Bottled Apples.

One would not expect cherry trees to actually throw stones—though they do seem to drop them around pretty freely sometimes, when half a dozen or so boys are out of sight in their branches—but we have seen one cherry-tree that was constantly engaged in moving rocks. For several years we have seen this tree and have often wondered how the work began, and what the result will finally be. Probably a little Cherry bird—a better friend than some bad boys think, had been *stoned* out of *his* tree, and in his hurried flight and fright, dropped a fair, plump cherry in the narrow, shallow crevice of a huge rock where there was scarcely earth enough to furnish it

A BOTTLED APPLE.

a covering. But great things often grow out of adversity; the badly-treated cherry had within it a stone, and within the stone a seed, which was really a little plant, and this sent a tiny root down between the solid walls of rock—encouraged by its attempts in that direction, it sent up a little stem and hung out a small banner of a leaf, just to let its friends—if it had any—know that it had gone into business for itself; established a cherry factory *on a solid foundation*. We will not stop to tell how hard it struggled to "keep its head above water." No. We mean from dying of drouth; but pass on to say that it came through its early trials all right, and besides taking a high rank in its profession, it does a good deal outside—or rather inside work, in splitting and moving rocks. What a dozen oxen would have found too much for their strength, this stripling of a tree has accomplished. When we last passed that way, the once little crevice was a "yawning chasm" and more than a foot across, opened by the gradual growth of this tree, which still flourishes.

We know that apples are canned or bottled, but this is after they have been quartered and cooked. Some one, probably an inventive boy, tried to bottle a whole raw apple, and the engraving shows how he succeeded. A droll looking apple, and you will no doubt ask how it was done? One can say, like Topsy, "'specs it growed so," and that would be the truth. The apple was put into the bottle while still small enough to pass through the neck of the ink bottle. But the apple was not to be bound down and limited to the size of the glass prison into which it had been thrust. The strong wall of glass was burst open and the growing fruit has forced its way out on one side in a singular manner, while a portion has literally overrun the mouth. If the bottle had been larger there would have been simply a change of shape to correspond to the form of the bottle. These examples are interesting, and teach the power which a tender but growing substance can exert. This shows us how we can, to a certain extent, control nature, and on the other hand, how every living thing is striving to reach a definite end, and will succeed under ordinary circumstances, but when molested, as in the case of the bottle and the apple, will approach as near as possible to the regular established form. To bottle apples alive you must use larger bottles or have smaller apples, or the result will not be any more successful than the one in the engraving.

What to Do at the Fair.

Of course you will go to *the* Fair—which means your own, town or county as it may be, and some of you may be able to visit others. In many of the fairs they very sensibly offer premiums for things that can be raised or made by boys and girls. This is a most excellent plan, but it is, of course, too late to advise you to exhibit in such cases, as the articles have to be thought of, and arranged for, long beforehand. We hope that many of our boys and girls will exhibit and take prizes, too. If you have something that you can exhibit, or intended to take to the fair, do not leave it at home because you are afraid that some one else will have something better. It is bad enough for some selfish older persons to do this. If only those exhibited who were sure of a prize, our fairs would be small affairs. Try and help your fair by showing the best you have. If you are so fortunate as to take a prize, that will be well; but it is quite as well to have tried to deserve it. You will learn why you failed, and that will be useful. If you try for a prize, do not set your heart so much upon it that you will be disappointed if you fail to get it, and be cross over it. Recollect that but one can take the premium, and if that falls to another, see why, and try to do better next time. But the chief object in going to the fair should not be to get a prize—though that is a good thing to do—but to learn something, and there is always much to be learned at a good fair. Do not run about from place to place without any object in view, for you will then be too tired to enjoy anything. It is very easy to get tired at a fair; indeed sight-seeing is a most fatiguing work. Make up your mind what kind of things you most wish to see, and see them thoroughly, and then, if you have time you can look at others. If it be implements, the poultry, the cattle, or the horses, the sewing machines, or the fancy work, take time and see what any of these have to tell you that you did not know before. At a State fair many years ago, in Ohio, we think it was, the most interesting objects we saw at the fair were two boys of about 12 and 14 years of age. We met them among the implements, and the way in which they examined these, and compared them with those they had at home, and their bright remarks as they came across something new, induced us to keep near the little fellows for a long time. Those boys are men now, but we have never been to a fair since without thinking of those boys. They made the fair very useful, and went home that night, with tired legs no doubt, but with their heads filled with useful hints, and probably had enough to think about and talk over for many a day thereafter. We call to mind these two boys as their manner of seeing the fair is one that we hope that all our youngsters will adopt. Those youngsters that hang about the catch-penny side-shows, or think that the most attractive objects are upon and around the refreshment stands, fail to make the best of *the* Fair.

The Boy and His Calf.

Look into the face of the "Young Herdsman" on the next page, with his fine Jersey pet by his side, and does not it say, just as plainly as if spoken, "How do you like *my* calf?" He is a fine fellow, little man; and you must

No. 469. Illustrated Rebus.—A Biblical truth upon which all should reflect.

have taken good care of him—or have seen that he was well cared for, which is all the same thing. Not only is the calf a fine one after its kind, but you can see that the youngster is a nice specimen after his kind. This is no fancy picture, for we happened to know both the boy and the calf. It was a great day, that, on which the portrait of the calf was taken, and the youngster, knowing that he would show in the picture, prepared for the occasion, and he insisted upon wearing his father's hat. What makes a nicer pet for a farmer boy, or farmer girl, too—for girls are very fond of pets—than a nice calf. Of course, every one of our immense family of Boys and Girls can not have a calf for a pet, but we have no doubt that a great many of them who live upon farms can have a calf to care for by merely asking, as the parents of many of you will be glad to see you take an interest in the stock of the farm. But do not ask for an animal to care

"HOW DO YOU LIKE HIM?"

for, without being sure that you can care for it. When you take an animal as your own, it is a promise that you will feed and water it, and give it all needed care. It is well, if your father thinks so too, to have a farm animal to look after, to care for, and if it is worthy, to take to the fair. Besides pets in the way of calves and colts for the larger youngsters, there are others deserving of care. We remember the first pet animal that we had was a little black kitten, which came into our possession before its eyes were open. What fun we had in feeding it! How we watched it grow! and how it did grow! until we had the largest and the blackest cat in all the neighborhood. But, like all cats, "Blackie" had his day, and when in old age he died, a little grave was dug and our pet was no more. Our boy in the picture may have tears in his bright eyes some day. His pet will soon become too big for him, and he must part with his calf. It will be a sad day for him when his calf goes away, but he looks as if he would bear it like a little man. If we were writing this for the parents, instead of the children (and we have no doubt that you will show this to father and

Fig. 1.—THE LONELY LOCUST.

mother), we should say, wherever the conditions allow, and where it can be done without inconvenience, give the youngsters some animal to care for, a calf or a colt to the older ones, a lamb, a little pig, or some chickens, to the younger. Most parents will be ready enough to do this, provided they can be sure that you will do your part, which is, to care for, feed, and water the animal as often as needed, no matter whether the weather be hot or cold, rainy or sunny. One reason why we wish you to have pet animals is, that you may *do your duty* by them. They are helpless without your aid. If you neglect them they will suffer, and that would be cruel. Recollect that the taking of a pet of any kind is an unspoken promise that you will care for it—and promises must be kept.

Some Curious Ways of Insects.

A friend told me the other day that he had just seen an interesting sight. "There were," he said, "two peculiar bugs rolling a great ball along the sidewalk just as boys roll a large snow-ball. I found them so excited and earnest in their work—I think they could not have been at play—that I stopped to watch them. They soon came to a hard place where they got stuck, and after trying several times to start the ball, they went all around it, and then rolled it back and started off in another direction."—If my friend had examined more closely, he would have found that these beetles—"Tumble-bugs" as they are called—were not at play, rolling the ball for the fun of the thing, but the ball, made of cow-dung, contained an egg, which the parent beetles were carrying to some safe place where the egg would hatch. I have seen similar "bugs," which, after having found a dead mouse, would go and dig a hole in a favorable place and then tug and pull, and roll and push, until they had brought Mr. Mouse to his grave. A German lover of insects thought he would see what these carrion beetles (as they are called) would do, so he killed a toad and placed it on the end of a stick, the other end of which was thrust into the ground. A number of beetles found the dead toad, probably by their keen sense of smell, and gathered about, but after going around the stick several times—much as a boy with his shot-gun will continually travel around a tree in which a squirrel is hid—they held a meeting and voted (as we may imagine) to undermine the stick, which they at once did, and toad, stick and all soon fell to the ground; and the toad was in due time buried. This true story of the stick and toad reminds me of the fact that insects will climb stalks and poles for the sake of the better view that is thereby gained. If the insect is up one stalk, and a higher one near by is seen, away goes the little admirer of nature, just as children go to the top of a hill (and grown people, too) to see what is to be seen; or perhaps the little insect went up the stalk for the same reason that Paul climbed the tree when he and Virginia were lost in the woods—to find out where he was, and try and find a way to his lost home. Honey bees will go some miles from their hives for the sweets which they are very busy in gathering. This has been proved by dusting the bees with a white or colored powder, as they leave the hive, and another person has watched for them on the flowers of plants several miles away. When bees start for home they are very swift and direct in their return—much more so than some boys I have seen, even after they had been sent for; but boys have longer to live than bees. Bees are very *sharp*, and when they really try, can make an ordinary boy trot home quite lively sometimes. I can well recollect being escorted up through the wheat field one afternoon, by some very warm friends (?) just because I made questionable motions at a bumble-bee. There is no doubt that bees distinguish strangers; many instances being on record where such has been very painfully the case.

Our artist gives us two pictures of insect life as looked at through the eyes of his imagination. In the first engraving we look in upon the musical Locust as he sits in a very thoughtful mood in his own rather poorly furnished studio. He is evidently not in good spirits, and it may be that the bottle, which we are sorry to see by his side, has helped to make him sad. Probably the number of brother musicians has been so large this year, and the pic-nics so few, that there has been but little demand for him and his rasping violin. His eye is growing dim, and before many weeks, provided the Turkeys don't get him, he must lay down his fiddle and his bow.

In the second picture we look into another professor's study, but one of a very different kind. This is the home of a keen-eyed scientist—Mr. Cricket—whose eyes are aided in their profound searchings by glasses and microscopes. From the specimen upon which his attention is fixed, and the books which he has gathered about him, we may conclude that he is trying to more thoroughly understand *man*. It would seem that he has shut himself up and is giving his whole time to the study of this little creature—one of the "worms," according to the title of one of his wonderful books. He evidently

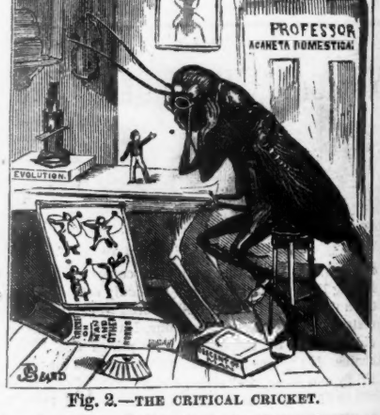


Fig. 2.—THE CRITICAL CRICKET.

views man with a "cricket's eye," and therefore we are not called upon to "pass his imperfections by." Mr. Cricket is doubtless very studious, and we may look for stranger revelations in the Development of Man-worm or Worm-man when his book is published; but I am inclined to think it would be better for him to make a visit upon the neighboring ants, look into their methods of doing things, and do likewise. Well, these pictures are but the fancies of an artist; he pictures insects as he imagines they might be, but after all, when we come to watch insects and their ways, while we may not find them imitating human actions, we shall see that they do things which are in their way sufficiently interesting to make us admire and wonder at them. UNCLE HAL.

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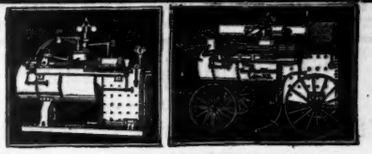

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JONES' SEEDING AND CULTIVATING Attachment is also easily adjusted to any drill, spreads the seed 4, 5, and 6 inches in the rows, and my experience with it seeding and cultivating my present wheat crop of 150 acres, warrants me in placing it head and shoulders above any other device.

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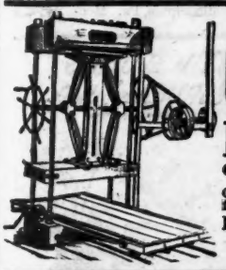

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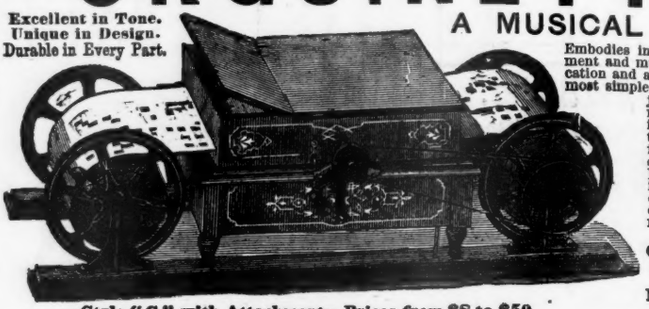

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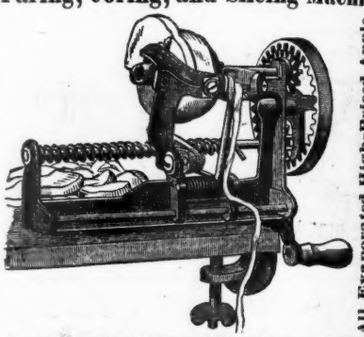

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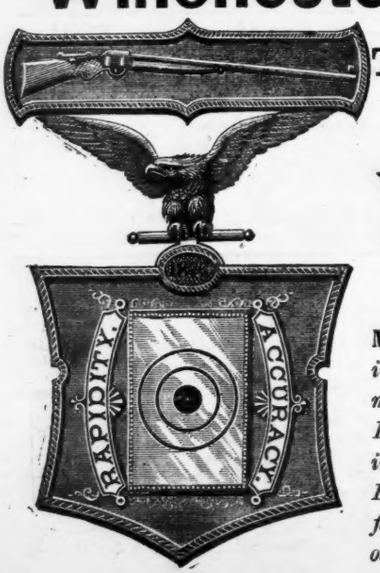

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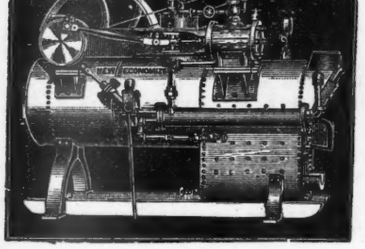

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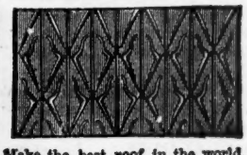

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containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Continued from Page 336.

In justice to the majority of our subscribers, who have been readers for many years, articles and illustrations are seldom repeated, as those who desire information on a particular subject can cheaply obtain one or more of the back numbers containing what is wanted.

Back numbers of the "American Agriculturist," containing articles referred to in the "Basket" or elsewhere, can always be supplied and sent post-paid for 15 cts. each, or $1.50 per volume.

Terms to New South Wales, New Zealand, Australia, Africa, etc.—To several inquirers. Under the latest revision of the Postal Union Regulations the price of the *American Agriculturist*, (either English or German edition), including postage *prepaid* through, will be covered by 7 shillings sterling per annum. This applies to the above countries, and to all others embraced in the General Postal Union. The simplest mode of remittance is by Postal Money Orders, payable in London, to the order of Orange Judd Company. These can be readily cashed in N. Y. City at a slight discount, which the publishers will cheerfully pay. For Club rates, (postage included), see our second cover page, and reckon 22 cents to the shilling sterling.

Casting for Windmill Arms.—"C. G.," Utah. A casting for a spider of a windmill shaft can be easily and cheaply made, as shown in the engravings. The arms are fitted into the open sockets and are bolted to the plate, and are centered as shown in the wood-cuts, by which one supports the other. For a windmill of 2 or 3 horse power, a plate 18 inches in diameter will be

Fig. 1.

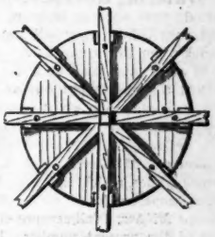

Fig. 2.

large enough. The flange for the shaft should project 3 or 4 inches to give a good bearing, one inch projection will be sufficient for those for the arms.

Pleuro-pneumonia.—A Basket item, last month, p. 320, reads; "Pleuro-pneumonia has diminished greatly in those European countries where inoculation has been introduced. We may soon see this terrible disease successfully treated by this method, as the dreaded small-pox is now in the human subject by vaccination." This item was quoted by the "New Era," Lancaster, Pa., with what comments we are not aware, but it gives the Secretary of the Board of Agriculture of Pennsylvania, Thos. J. Edge, Esq., a text for an official communication to that journal. A careful reading of the item quoted will show that it is the statement of a fact, and an indication of what may possibly happen. The Secretary is much in doubt as to the fact, and construing the rest into a recommendation of the practice of inoculation, goes on to give his reasons why "it would be a grave mistake" to attempt it in his State. Some of his views we quite agree with, but we hardly think it fair to place the *American Agriculturist* in the position of recommending indiscriminate inoculation. The Secretary himself admits that there are conditions "where it may do good," which is quite as much as we have ever advocated. We have in hand, and hope to publish before long, an article by a veterinary surgeon of large experience with the disease, which we think may convince the Hon. Secretary that in some localities, at least, the disease has been diminished by inoculation.

Concrete.—An error was made last month in referring a writer, who inquired about concrete, to November, 1874. It should have been *December* of the same year—in which number the subject is fully treated, with fifteen illustrations.

Chess.—Not the wheat-weed of that name, but the game. A friend in S. Carolina, suggests that we devote a column to chess, in our Boys and Girls' Department. That department is intended for the amusement and instruction of young people. Chess is hardly an amusement, it is a study calling for mental effort. A friend who is one of the best chess players in the country, has often told us that a close game the evening before, has exhausted, and unfitted him for the day's work. While we should be glad if we could give room to a column to chess, it would not be in the Children's Department.

The Rose Breasted Grosbeak.—"A. A. R.," Hazel Green, Wis., sends us for name, the wing of this bird, which was killed while eating cherries. This pretty bird, which is easily recognized by its gay rose-colored breast, is common in some localities, and singularly rare in others. It frequents orchards and shrubbery near the house, feeds largely on berries, small fruits, and seeds, and like the one sent, often meets his death while committing depredations on the fruit trees.

To Stain Wood Brown.—"K. S." The most satisfactory method we have tried, is as follows. Get an ounce each of Catechu and Bichromate of Potash. Break the Catechu—which is a blackish gum-like substance—into small fragments, place it in a glass or earthenware vessel, with a piece of washing soda as large as a walnut, and pour upon it a pint of boiling water, and stir until dissolved. Put the Bichromate in a bottle with a pint of cold water, and dissolve with occasional shaking. Paint over the wood-work to be stained, first with the Catechu solution, and let it dry; it will be of a dull dirty brown. When dry, go over it with the solution of Bichromate, and it will turn to a very rich chestnut brown. By varying the strength of the solutions, the depth of color will be varied. When quite dry, apply shellac, or other varnish. Very cheap, easily applied, and satisfactory.

Spade for the Fowls.—It is well to turn up several square feet of the earth of the poultry-yard with a spade every now and then, as it will not only furnish the fowls with fresh meat, in the shape of worms, but give them an opportunity to exercise themselves at scratching. It also turns under the droppings, and makes the yard more healthful.

Watering Horses.—During warm weather, horses should have water at frequent intervals. If allowed to get very thirsty, they will, unless prevented, drink too much when they come to it. A good sized pailful of cold water is as much as a horse should take at a time. When a horse is put out at noon, it should be first watered, and then given another pailful just before going to work. Little and often is the best rule.

Grape Mildew.—"J. L. E.," Metuchen, N. J., sends grapes, which, upon careful examination with the microscope, are found to be affected with the *American Grape Mildew*, a full account of which is given on page 349 of the present number. It is this fungus which causes the young berries to cease growing, turn first purple and then brown, and finally black, with a white covering of mould upon the decaying parts. Sulphur applied *in time*, is the only known remedy.

Stable and Carriage House.—"A. C. V.," Mason Co., W. Va. Many plans for stables have been given at various times in the *American Agriculturist*; some suitable for one horse will be found in June, 1878.

Consumption of Ice in a Dairy.—"T. G. S.," N. Y. The quantity of ice required in a dairy depends upon the method of using it. Fifty lbs. a day will keep a 3-can (100 lbs.) Cooley Creamery at 40 degrees, and the same quantity will cool a 10-can (300 lbs.) Hardin Creamery at 45 degrees. A 4-cow dairy will be supplied by a 3-can Cooley Creamery, and a 10-cow dairy by a 10-can Hardin one.

A School in Australia.—We feel quite sure that there is one very good school in New South Wales, for its teacher writes: "Attached to my school is a garden, and a small vineyard of my own planting, and I am indebted to your valuable periodical for many hints and suggestions." We are confident that, where the surroundings of the school-house (a public school too,) are thus cared for, the plants within the school-house have proper care and training. Success to this far off school!

An Invasion from the North.—On July 28th last, there arrived in the port of New York, 15 families, numbering about 80 persons, from Iceland. The few Icelanders who have heretofore left their country have settled on the coast in high latitudes, where they could follow their pursuit as fishermen. But this colony comes with the intention of settling in Minnesota and becoming farmers. Though they arrived in our hottest weather, they clung to the heavy woollens and furs to which they had been accustomed at home, but in this, as in many other matters, they will soon adapt themselves to their new conditions, and we have no doubt that, like the Danes, of which nation they are really a part, they will become estimable and useful citizens.

Rabbits.—We regret to say to the many who have asked where they can procure rabbits, that we have good reason to believe that there are none for sale. In view of the numerous inquiries, we some time ago suggested, that those having these animals for sale, should let others know it. As this has met with no response, we are quite unable to answer a large number of inquiries, from those who would be purchasers of both common stock and fancy breeds.

A Double Header.—The "Springfield (Mass.) Union" gravely tells of what it truly calls "a remarkable freak of vegetation," which occurred at Worcester, also in Mass. It is nothing less than "a potato-vine which bears tomatoes." This is economizing matters truly—"taters" underground and "tomatuses" above ground. Why not throw in a streak of Egg-plant? If we can have our tubers at one end and our fruit at the top, why not get in a cross of spinach, so that the foliage could at the same time be utilized as "greens"? "Unfortunately the vines were pulled up" before any one who could tell the difference between a potato-ball and a tomato saw them, and the world has lost a remarkable improvement in the way of "garden sass." It was about time for this story to "come round"; it revolves once in about three years.

Bananas and Cocoanuts.—During the year ending July 1st, 1879, there were imported into New York Bananas to the value of nearly $400,000, and Cocoanuts worth nearly $200,000. Cocoanuts are duty free.

Will He Succeed?—A young man in Cuyahoga Co., O., writes that he is 18 years of age, is going to Colorado to engage in the cattle business, will arrive there with little money, wishes our advice "as to what course to pursue," and asks: "What are my prospects of success?" We do not think that the prospects of any young man can be very brilliant who writes on a purely personal matter, asking purely personal advice, and does not sign his name. One who makes so important an omission as this, is likely to be careless in other matters; success in life depends upon attentions to details.

Value of Soda Ash.—"M. H. C.," Webster, Mass. Soda ash is of no use as a fertilizer by itself, but to reduce swamp muck, or soften bones, it may be made useful.

Sowing Grass Alone.—"F. H.," Scotch Plains, N. J. Grass seed may be sown in August. Red-top will suit wet land, and may be sown with Timothy; 20 lbs. of Red-top, and 10 lbs. of Timothy per acre may be sown. The bone-dust may be sown with the seed, and all harrowed in together with a brush harrow.

"Apiarian."—"C. P. F.," Kent Co., Mich. We have not the least desire to "reconcile" our use of this or any other word with Webster. We know that the dictionaries give Apiarian as an adjective, but trades and occupations are not governed by dictionaries. Not long ago, a flower-seller in England called himself "Bouquetist to her Majesty," and others have since called themselves "Bouquetists," and there is danger that the uncouth name may be adopted. If a dealer in Bees chooses to call himself a "Beevender," a "Beeologist," or a "Beeist," and people adopt the name, it will then become the business of dictionary makers to record the fact. The dictionaries give "Apiarist" as the name of one who deals in bees, but bee-dealers choose to call themselves "Apiarians." It is a good word, and if those most concerned choose to adopt it, who shall object?

Dominique-Leghorns?—"H." There is no such breed as Dominique-Leghorns; the Dominiques and Leghorns are distinct breeds, and if crossed, the result will be a mongrel, and not a pure-bred fowl.

Absorption of Water by Leaves.—Recent experiments by Boussingualt, Henslow, and others, all go to show that the foliage of plants *does* absorb moisture, and to a considerable extent.

Poultry Houses, &c.—"F. H. S.," Fort Plain, N. Y. The *American Agriculturist*, figured and described the Plymouth Rocks, in December, 1877. As to poultry houses, there have been but few numbers in the past six years, in which plans or suggestions may not be found.

Celluloid Collars.—Among the many uses to which Celluloid is put, is that of making men's collars. Celluloid is the name given to a preparation of *Cellulose*, or the material of which vegetable cells is composed. Cotton, or other pure forms of cellulose, is so changed by the action of acid, that it can be dissolved in ether, and other solvents, and thus obtained in a condition to be moulded or worked into various desirable forms. It is claimed for the Celluloid Collars, that they can not be detected from linen, are much coolor, and can be worn for an indefinite length of time. They are cleaned by simply rubbing them with a wet cloth or sponging. Some of the clerks in our office have worn them for several months, without their being noticed, and they are now as good as new. Shirt bosoms, and cuffs, and other similar articles are also made of Celluloid.

Weeds.—If agriculture had only to encourage the growth of desirable and useful plants, its work would be easy. But there is the more difficult task of preventing the growth of undesirable plants, to which we give the general name—weeds. The first step in destroying weeds is to know what they are, and their habits of growth. In view of this, we ask farmers and gardeners in all parts of the country to send us specimens of any weeds they find particularly troublesome, the names of which they do not know, and especially such weeds as have recently made their appearance in their localities.

The Travis Wheat Hoe.—"W. J. G.," Sparta, Ill. The address of Mr. Travis, the inventor of the Wheat Hoe, is Brandon, Oakland Co., Mich. Mr. Travis is an old farmer, and not a maker of machines.

Preserving Eggs in Ice.—"C. W. D.," Cambridge, Ill. There is no process in use, by which eggs are preserved in ice; at least we never heard of such. Eggs are preserved by the lime process, and are packed in refrigerators or cool cellars. If there is any "ice process," we should be glad to hear of it.

Lime on Prairie Soils.—"F. R. B.," Macon, Miss. The application of lime to old prairie soils, would probably be beneficial for a time; it makes no difference whether the lime is made from stone taken from the soil, or brought from a distance; lime, is lime—whatever its source, and its effect is to decompose vegetable matters in the soil, and it also acts upon some of the mineral matter; after these are used up, the land is in a worse condition than before, unless manure of some kind is used.

A One-Horse Drill.—The better yield of a crop sown by a drill is sufficient to repay the cost of an implement, frequently in one season. A drill costing $90 will be paid for in sowing 50 acres. The cost of a two-horse drill, however, prevents its use on small farms where but four or five acres are sown yearly. A one-horse drill is now made for this especial purpose, which sows either 3 or 5 rows, and may be made to sow in rows 13½ to 17 inches apart. This drill is very useful where the wheat is to be cultivated. It can be drawn easily by one horse, and will enable small farmers to enjoy all the advantages of drilling in their seed with their richer neighbors.

The Best Churn.—"A. E. W.," Davies Co., Ind. The best churn is usually the one with which a person is the most familliar. Of the large number (about 8,000) of different churns that have been invented, but a few have come into use, and of these, perhaps only 10 or 12 can be called good. For a one-cow dairy, the small sized dash churn, would get the most votes in a convention, and next to this would come the Blanchard. This is about the general popular estimate, as it appears to us.

Troublesome Cows.—"J. K.," Northampton, Pa. It is advisable to fatten, and kill off every cow, that is objectionable in any way, or that gives trouble in milking or breeding. There is no other manner of procuring cows that are free from faults, than breeding from the best, and discarding all others as quickly as possible.

Wind Sucking.—"M. M. P.," Augusta, Wis. Cribbing and Wind Sucking is a habit and a vice, contracted through neglect and bad education. The first time a colt or a horse is seen to attempt this practice, it should be stopped by removing everything which will encourage or allow it. It will soon be forgotten; but if it is once acquired, it will never be broken up. It is not caused by disease, but is itself the cause of sore mouth, flatulence, indigestion, and other ailments.

Film on the Eye.—"C. W. B.," Cumberland Co., N. J. A white or creamy yellow film covering the eye, is generally caused by a deposit of pus between the coats, which is one effect of inflammation. The inflammation is more likely to be caused by a chaff in the eye, or a blow, than by anything else. The chaff may be removed by putting a few flax seeds in the eye, these exude soft, cooling, mucilaginous matter, which eases the pain, and helps the chaff to escape. The pus will generally be absorbed by means of a counter irritation, caused by blowing a pinch of Burnt Alum into the eye, through a quill. The eye may be cooled by bathing it with a solution of one dram of Sugar of Lead, in a quart of water. Half a pound of Salts given dissolved in water, will help to remove any fever caused by the irritation.

State, County, and Other Fairs in 1879.

STATE FAIRS.

Arkansas	Little Rock	Oct. 20
California	Sacramento	Sept. 8-13
Colorado	Denver	Sept. 23-27
Connecticut	Hartford	Oct. 14-17
Delaware	Dover	Sept. 22-27
Georgia	Macon	Oct. 27—Nov. 1
Illinois	Springfield	Sept. 29-Oct. 4
Indiana	Indianapolis	Sept. 29-Oct. 4
Iowa	Des Moines	Sept. 1- 5
Kentucky	Frankfort	Sept. 2- 7
Maine	Portland	Sept. 16-19
Michigan	Detroit	Sept. 15-19
Minnesota	St. Paul	Sept. 1- 6
Montana	Helena	Sept. 29-Oct. 4
Nebraska	Lincoln	Sept. 8-12
New Jersey	Waverley	Sept. 15-20
New York	Utica	Sept. 8-12
North Carolina	Raleigh	Oct. 13-18
Nevada	Reno	Oct. 7-12
Ohio	Columbus	Aug. 25-29
Pennsylvania	Philadelphia	Sept. 8-20
Rhode Island	Cranston	Sept. 9-11
South Carolina	Columbia	Nov. 11-14
Tennessee	Nashville	Sept. 30-Oct. 4
Vermont	Montpelier	Sept. 9-11
Virginia	Richmond	Oct. 28 31
Wisconsin	Madison	Sept. 8-12

Industrial and District Fairs.

Am. Institute	New York	Sept. 17-Nov. 22
Am. Pomolo'l S'y.	Rochester	Sept. 17-19
Am. Bee-keepers.	Chicago	Oct. 21-23
Canada, Central	Guelph	Sept. 15-21
Cincinnati Ind. Ex.	Cincinnati	Sept. 10-Oct. 11
Illinois Fat Stock.	Chicago	Nov. 10-15
Inter State	Chicago	Sept. 3-Oct. 18
Kansas City Ex.	Kansas City, Mo.	Sept. 15-20
New England	Worcester, Mass.	Sept. 2- 5
Nova Scotia, Prov'l.	Halifax	Sept. 29-Oct. 3
Ontario, Provincal.	Ottawa	Sept. 22-27
St. Louis Ind. Ex.	St. Louis, Mo	Sept. 22-Oct. 5
Tri-State	Toledo, O	Sept. 8-13
N. W. Agr. Ass'n.	Dubuque	Sept. 8-12
Georgia North	Atlanta	Oct. 20 26
Indiana, N. East'n	Waterloo	Oct. 6-10
Indiana Northern	Ft. Wayne	Sept. 22-26
Iowa Northern	Postville	Sept. 17-19
Kansas Central	Junction C'y	Sept. 30-Oct. 3
Kentucky, North.	Florence	Aug. 26-30
Kentucky South'n	Glasgow	Oct. 7-10
Massachusetts H'l	Boston	Sept. 9-13
Mechanics	San Francisco.	Aug. 5-Sep. 5
Michigan, Central	Lansing	Sept. 29-Oct. 3
Michigan, Eastern	Ypsilanti	Sept. 23-26
Michigan Hort'l.	Detroit	Sept. 15-19
Michigan, West'n.	Grand Rapids	Sept. 22-27
Minnesota A. & M.	Minneapolis	Sept. 1- 6
Montreal Hort'l.	Montreal	Sept. 16-18
Nebraska, Nort'n.	Fremont	Sept. 23-27
Ohio Central	Mechanicsburg	Sept. 2- 5
Ohio Northern	Cleveland	Sept. 1- 5
Ohio Southern	Dayton	Sept. 22-26
Pennsyl'a, Wes'n	Mercer	Sept. 9-11
Wisconsin Nort'n	Oshkosh	Sept. 15-20

County Fairs.

MAINE.

Androscoggin	Lewiston	Oct. 7- 9
Cumberland	Cumberland	Sept. 24-25
Franklin	Strong	Sept. 24-25
Knox	Thomaston	Sept. 23-25
Knox, North	Union	Sept. 30-Oct. 2
Ossipee Valley	Cornish	Sept. 30-Oct. 2
Oxford, West	Fryeburg	Oct. 14-16
Penobscot	Patten	Sept. 17-18
Penobscot, West	Exeter	Sept. 30-Oct. 1
Piscataquis Cent'l	Foxcroft	Oct. 1- 2
Piscataquis East	Milo	Sept. 30-Oct. 1
Sagadahoc	Topsham	Oct. 14-16
Somerset, Central	Skowhegan	Sept. 23-25
Somerset, West'n.	North Anson	Oct. 1- 2
York	Berwick	Sept. 23-25

NEW HAMPSHIRE.

Belknap	Cranston	Sept. 9 11
Bradford	Newberry	Sept. 24-25
Cheshire	Keene	Sept. 23-25
Kearsarge	Warner	Sept. 24-25
Upper Coos	Colebrook	Oct. 1- 2

VERMONT.

Caledonian	St. Johnsbury	Sept. 16-18
Franklin	Sheldon	Sept. 10-12
Rutland	Rutland	Sept. 3- 5
Union	Turnbridge	Sept. 30-Oct. 2
Washington	Montpelier	Sept. 24-25

MASSACHUSETTS.

Attleboro	Attleboro	Sept. 3-Oct. 2
Barnstable	Barnstable	Sept. 22-24
Berkshire	Pittsfield	Sept. 30-Oct. 2
Bristol	Taunton	Sept. 23-25
Deerfield Valley	Charlemont	Sept. 18-19
Essex	Lynn	Sept. 30-Oct. 2
Franklin	Greenfield	Sept. 25-26
Hampden	Springfield	Sept. 23-24
Hampden, East	Palmer	Sept. 16-17
Hampshire	Amherst	Sept. 18-19
Highland	Middlefield	Sept. 11-12
Hingham	Hingham	Sept. 23-24
Hoosac Valley	North Adams	Sept. 16-17
Housatonic	G't Barrington	Sept. 24-26
Marshfield	Marshfield	Sept. 10-12
Martha's Viney'd.	W. Tisbury	Sept. 30-Oct. 1
Middlesex	Concord	Sept. 25-27
Middlesex, North.	Lowell	Sept. 23-24
Middlesex, South.	Framingham	Sept. 16-17
Nantucket	Nantucket	Sept. 3- 4
Plymouth	Bridgewater	Sept. 17-19
Union	Blandford	Sept. 17-19
Worcester	Worcester	Sept. 2- 5
Worcester, North	Fitchburg	Sept. 23-24
Worcester, N. W.	Athol	Sept. 30-Oct. 2
Worcester, South.	Sturbridge	Sept. 11-12
Worcester, S. E.	Milford	Sept. 23-25
Worcester, West.	Barre	Sept. 25-26

RHODE ISLAND.

Washington	West Kingston	Sept. 16-18

CONNECTICUT.

Danbury	Danbury	Oct. 8-11
Fairfield	Norwalk	Sept. 23-26
Guilford	Guilford	Oct. 8
Meriden	Meriden	Sept. 17-19
Milford & Orange	Milford	Sept. 10-11
New Haven	New Haven	Oct. 1- 3
New Lond'n	Norwich	Sept. 23-25
New Milford	New Milford	Sept. 30-Oct. 3
Ridgefield	Ridgefield	Sept. 30-Oct. 3
Tolland, East	Stafford Springs	Oct. 7
Torrington	Wolcottville	Oct. 14-15
Union	Huntington	Sept. 17-19
Union	Trumbull	Sept. 17-19
Waterbury	Waterbury	Sept. 16-17
Windham	Brooklyn	Sept. 23-25
Woodbridge & B'y	Bethany	Sept. 24-25
Woodbury, Union	Woodbury	Sept. 16-17
Woodstock	So. Woodstock	Sept. 16-18

NEW YORK.

Alleghany	Angelica	Sept. 30-Oct. 2
Brockport Union.	Brockport	Oct. 3- 4
Broome	Whitney's Point.	Sept. 23-26
Carthage Union	Carthage	Sept. 3- 4
Cattaraugus	East Randolph	Sept. 15-18
Cayuga	Auburn	Sept. 30-Oct. 2
Chautauqua	Jamestown	Sept. 9-12
Chenango	Norwich	Sept. 16-18
Cortland	Cortland	Sept. 2- 4
Delaware	Delhi	Sept. 16-18
Delaware Dairy'n	Delhi	Nov. 12-13
Duchess	Washington Hol.	Sept. 23-27
Essex	Westport	Sept. 16-17
Franklin	Malone	Sept. 29-Oct. 1
Fulton	Johnstown	Sept. 16-18
Genesee	Batavia	Sept. 30-Oct. 1
Gouverneur	Gouverneur	Sept. 2- 4
Greene	Cairo	Sept. 17-18
Hampton	Bridgehampton	Sept. 22-25
Herkimer	Herkimer	Sept. 16-18
Lewis	Lowville	Sept. 16-19
Livingston	Genesco	Oct. 1- 2
Maine Village	Maine, (Broome)	Sept. 16-19
Montgomery	Fonda	Sept. 23-25
Niagara	Lockport	Sept. 25-27
Oneida	Rome	Sept. 15-19
Onondaga	Syracuse	Sept. 16-19
Onondaga N'west.	Baldwinsville	Sept. 23-27
Ontario	Canandaigua	Sept. 23-27
Orange	Washingtonville	Sept. 24-26
Orleans	Albion	Sept. 26-27
Oswego	Mexico	Sept. 2- 5
Otsego	Cooperstown	Sept. 22-24
Queens	Mineola	Sept. 23-25
Rockland	Spring Valley	Sept. 23-25
St. Lawrence	Canton	Sept. 16-18
Saratoga	Saratoga	Sept. 2- 5
Schenevus Valley	Schenevus	Sept. 18-20
Schoharie	Schoharie	Sept. 23-25
Seneca	Seneca Falls	Sept. 30-Oct. 2
Skaneateles Farm	Skaneateles	Sept. 17-19
Steuben	Bath	Oct. 1- 3
Suffolk	Riverhead	Sept. 30-Oct. 2
Sullivan	Monticello	Oct. 1- 2
Tioga	Owego	Sept. 2- 4
Tompkins	Ithaca	Sept. 16-18
Washington	Sandy Hill	Sept. 10-12
Wayne	Lyons	Sept. 24-26
Western N. York.	Rochester	Sept. 15-19
Winfield	West Winfield	Sept. 1-18
Yates	Penn Yan	Sept. 16-18

NEW JERSEY.

Burlington	Mt. Holly	Oct. 7-10
Cape May	So. Seaville	Oct. 1- 2
Cumberland	Bridgeton	Sept. 17
Egg Harbor City	E. H. City	Sept. 15-16
Hunterdon	Flemington	Sept. 23-25
Monmouth	Freehold	Sept. 9-11
Somerset	Somerville	Sept. 30-Oct. 2
West Jersey	Woodstown	Sept. 10-11

PENNSYLVANIA.

Berks	Reading	Sept. 30-Oct. 2
Bradford	East Towanda	Oct. 1- 3
Chester	West Chester	Oct. 2- 4
Clarion	Clarion	Sept. 24-26
Columbia	Bloomsburg	Oct. 15 17
Crawford	Conneautville	Oct. 1- 3
Franklin	Chambersburg	Oct. 7-10
French Creek	Cochranton	Sept. 16 18
Gratz	Gratz	Sept. 23-26
Indiana	Indiana	Sept. 30-Oct. 3
Lehigh	Allentown	Sept. 30-Oct. 4
Lycoming	Williamsport	Sept. 24-26
Mercer	Stoneboro	Sept. 30-Oct. 2
Montgomery	Ambler Park	Sept. 24-26
Northampton	Nazareth	Oct. 7-10
Northumberland	Sunbury	Sept. 30-Oct. 4
Oxford	Oxford	Sept. 24-26
Rich Hill	Jacksonville	Sept. 25-26
Ringtown	Ringtown	Sept. 16-20
Somerset	Somerset	Sept. 24-27
Susquehanna	Montrose	Sept. 17-19
Troy	Troy	Sept. 23-25
Union	Burgettstown	Sept. 30-Oct. 2
Warren	Sugar Grove	Sept. 16-19
Washington	Washington	Oct. 1- 4
York	York	Oct. 7-10

OHIO.

Allen	Lima	Sept. 30-Oct. 3
Ashtabula	Jefferson	Sept. 23-26
Auglaize	Wapakoneta	Oct. 7-10
Belmont	St. Clairsville	Sept. 17-19
Blanchester	Blanchester	Sept. 9-13
Brown	Georgetown	Sept. 2- 5
Butler	Hamilton	Oct. 6-10
Carroll	Carrollton	Oct. 7- 9
Clarke	Springfield	Aug. 19-22
Clermont	Bostock	Sept. 2- 5
Clinton	Wilmington	Sept. 2- 5
Clyde	Clyde	Oct. 7-10
Columbiana	New-Lisbon	Sept. 30-Oct. 3
Crawford	Bucyrus	Sept. 30-Oct. 3
Darke	Greenville	Sept. 16-19
Defiance	Defiance	Sept. 23-26
Delaware	Delaware	Sept. 24-26
Erie	Sandusky	Sept. 23-26
Fairfield	Lancaster	Oct. 15-18
Fulton	Wauseon	Sept. 3- 5
Gallia	Galliopolis	Sept. 3- 5
Geauga	Burton	Sept. 23-25
Greene	Xenia	Aug. 13 15
Greenfield	Greenfield	Aug. 12 15
Guern. Co. F. & M.	Washington	Oct. 1- 3
Hancock	Findlay	Oct. 2- 4
Hardin	Kenton	Oct. 1- 4
Harrison	Cadiz	Sept 1- 4
Highland	Hillsboro	Aug. 26-29
Hocking	Logan	Oct. 9-11
Holmes	Millersburg	Sept. 23-26
Huron	Norwalk	Sept. 30-Oct. 3
Jackson	Jackson C. H.	Sept. 25-26
Jamestown	Jamestown	Aug. 27-29
Jefferson	Smithfield	Sept. 24-26
Knox	Mt. Vernon	Oct. 7-10
Lake	Painesville	Sept. 16-18
Licking	Newark	Sept. 30 Oct. 3
Logan	Bellefontaine	Sept 30-Oct. 3
Lorain	Elyria	Sept. 16-18
Mahoning	Canfield	Oct. 7- 9
Marion	Marion	Sept. 30-Oct. 3
Medina	Medina	Sept. 16-18
Meigs	Rock Spring	Sept. 10-12
Mercer	Celina	Sept. 24-26
Miami	Troy	Sept. 30-Oct. 3
Morgan	McConnellsville	Sept. 9-12
Morrow	Mt. Gilead	Sept. 23-26
Muskingum	Zanesville	Sept. 2- 5
Ottawa	Port Clinton	Sept. 17-19
Pickaway	Circleville	Sept. 30-Oct. 3
Portage	Ravenna	Oct. 7- 9
Preble	Eaton	Sept. 30-Oct. 3
Putnam	Ottawa	Oct. 8-11
Richland	Mansfield	Sept. 24-26
Ross	Chillicothe	Sept. 2- 5
Sabina	Sabina	Aug. 18-21
Sandusky	Fremont	Sept. 30-Oct. 3
Seneca	Tiffin	Sept. 30-Oct. 3
Shelby	Sidney	Sept. 30-Oct. 3
Stark	Canton	Sept. 30-Oct. 3
Summit	Akron	Sept. 30-Oct. 3
Trumbull	Warren	Sept. 16-19
Union	Marysville	Sept. 30-Oct. 3
Van Wert	Van Wert	Oct. 2- 4
Warren	Lebanon	Sept. 16-19
Washington	Marietta	Sept. 2- 5
Wellington	Wellington	Aug. 19-22
Williams	Bryan	Oct. 7-10
Wood	Tontogany	Sept. 30-Oct. 3
Wyandot	Up. Sandusky	Oct. 7-10

INDIANA.

Allen	Fort Wayne	Sept. 22-26
Bartholomew	Columbus	Aug. 29-30
Blackford	Hartford City	Sept. 23 26
Bridgeton Union.	Bridgeton	Aug. 25-30
Boone	Lebanon	Sept. 8-12
Camb. C'y A. H. M.	Cambridge City	Sept. 16-19
Carroll	Delphi	Sept. 9-12
Cass	Logansport	Sept. 25-27
Clay	Brazil	Aug. 28-29
Clinton	Frankfort	Sept. 15-19
Daviess	Washington	Oct. 7-11
Delaware	Muncie	Sept. 9-12
Dunkirk Union	Dunkirk	Sept. 2- 5
Edinburg Union.	Edinburg	Sept. 22-27
Elkhart	Goshen	Sept. 30-Oct. 2
Fayette	Connersville	Sept. 2- 6
Fountain, W. & V.	Covington	Sept. 23-26
Franklin	Brookville	Sept. 23-26
Fulton	Rochester	Sept. 25-27
Gibson	Princeton	Sept. 15-19
Grant	Marion	Sept. 17-20
Greene	Linton	Oct. 7-11
Hamilton	Cicero	Sept. 26-29
Harrison	Corydon	Sept. 1- 5
Henry	New Castle	Sept. 16-19
Henry, Mad. & Del.	Middletown	Aug. 19-22
Howard	Kokomo	Sept. 1 6
Huntington	Huntington	Sept. 17-20
Jackson	Brownstown	Aug. 25-29
Jasper	Rensalaer	Sept. 9-12
Jay	Portland	Sept. 30-Oct. 3
Jefferson	Madison	Sept. 17-20
Knightstown U'n.	Knightstown	Aug. 26-29
Knox	Vincennes	Oct. 13-18
Kosciusko	Warsaw	Sept. 24-27
Lake	Crown Point	Sept. 30-Oct. 1
La Grange	La Grange	Sept. 24-26
La Porte	La Porte	Sept. 24-26
Lawrence	Bedford	Sept. 9-13
Loogootee A. & M.	Loogootee	Sept. 2- 6
Madison	Anderson	Sept. 2- 5
Marion	Valley Mills	Sept. 11-13
Marion (colored)	Indianopolis	Aug. 26-30
Miami	Peru	Sept. 16-19
Middlefork Dist.	Middlefork	Aug. 25-29
Monroe	Bloomington	Aug. 26-30
Morgan	Martinsville	Sept. 2- 6
Noble	Ligonier	Oct. 8-11
Northeastern Ind.	Waterloo	Oct. 6-10
Orange	Paoli	Sept. 23-27
Perry	Rome	Sept. 29-Oct. 3
Pike	Petersburg	Sept. 1- 5
Posey	New Harmony	Sept. 9-13
Prairie Farmer	Francesville	Sept. 16-19
Randolph	Winchester	Sept. 16-19
Remington A. A.	Remington	Aug. 26-29
Ripley	Osgood	Aug. 12-15
Rush	Rushville	Sept. 9-12
Russellville U'n.	Russellville	Aug. 25 30
Shelby	Shelbyville	Sept. 2- 6
Southeastern Ind.	Aurora	Sept. 3- 7
Stark	Knox	Sept. 25-27
Steuben	Angola	Sept. 23-26
Switzerland & O.	East Enterprise	Sept. 9-12
Tippacanoe	Lafayette	Sept. 1- 6
Tipton	Tipton	Sept. 23-26
Thornton'w Union	Thorntown	Sept. 23-26
Union Ag'l & M.	Union City	Sept. 23-27
Vigo	Terre Haute	Sept. 9 12
Wabash	Wabash	Sept. 9-12
Warren	West Lebanon	Sept. 8-12
Warrick	Booneville	Oct. 7-11
Wells	Bluffton	Oct. 6- 9
Whitley	Columbia City	Sept. 30-Oc. 1

ILLINOIS.

Adams	Camp Point	Sept. 1- 6
Adams	Quincy	Sept. 9-12
Boone	Belvidere	Sept. 2- 5
Brown	Mt. Sterling	Aug. 26-29
Bureau	Princeton	Sept. 16-19
Carroll	Mt. Carroll	Sept. 16-19
Cass	Virginia	Aug. 26-29
Champaign	Champaign	Sept. 23-26
Clark	Marshall	Oct. 1- 3
Clay	Flora	Sept. 30-Oct. 3
Coles	Charleston	Sept. 9-13
Crawford	Robinson	Sept. 30 Oct. 3
Cumberland	Majority Point	Sept. 16-19
DeKalb	Sandwich	Sept. 13-14
DeKalb	Sycamore	Sept. 16-19
DeWitt	Clinton	Aug. 19-22
Douglas	Tuscola	Sept. 16-19
DuPage	Wheaton	Sept. 2- 5
Edgar	Paris	Sept. 2- 5
Edwards	Albion	Sept. 30-Oct. 4
Fayette	Vandalia	Sept. 17-19
Ford	Paxton	Sept. 9-12
Ford	Gibson City	Sept. 2- 5
Franklin	Benton	Sept. 23-26
Fulton	Canton	Sept. 23-26
Fulton	Avon	Sept. 29-Oct. 3
Gallatin	Shawneetown	Oct. 7-
Greene	Carrollton	Oct. 21-24
Grundy	Morris	Sept. 9-12
Hardin	Elizabethtown	Sept. 17-20
Henderson	Biggsville	Sept. 9-12
Henry	Cambridge	Aug. 25-29
Iroquois	Onarga	Sept. 2- 6
Jackson	Murphysboro	Sept. 23-26
Jasper	Newton	Sept. 23-26
Jersey	Jerseyville	Oct. 14-17
Jo Daviess	Galena	Sept. 30-Oct. 3
Jo Daviess	Warren	Sept. 23-26
Kane	Elgin	Sept. 9-12
Knox	Knoxville	Sept. 15-19
Knox	Galesburg	Sept. 2- 5
Lake	Waukegan	Sept. 29-Oct. 4
LaSalle	Ottawa	Sept. 1- 6
Lawrence	Lawrenceville	Oct. 8-11
Livingston	Pontiac	Sept. 2- 6
Livingston	Fairbury	Sept. 9-13
Logan	Lincoln	Aug. 25-30
Logan	Atlanta	Sept. 1- 5
Macon	Decatur	Sept. 23-27
Macoupin	Carlinville	Sept. 9-12
Marion	Centralia	Sept. 30-Oct. 3
Marshall	Wenona	Sept. 23-Oct. 4
Massac	Metropolis	Oct. 8-11
McDonough	Macomb	Aug. 26-29
McHenry	Woodstock	Sept. 9-12
McHenry	Marengo	Sept. 16-19
McLean	Bloomington	Sept. 23-26
Menard	Petersburg	Sept 2- 5
Mercer	Aledo	Sept. 16-19
Montgomery	Hillsboro	Sept. 16-18
Morgan	Jacksonville	Aug. 18-22
Ogle	Rochelle	Sept. 22-
Ogle	Oregon	Sept. 9-12
Perry	Pickneyville	Oct. 1- 3
Piatt	Monticello	Aug. 26-29
Pike	Pittsfield	Sept. 23-26
Pope	Golconda	Oct. 2- 4
Putnam	Hennepin	Sept. 9-12
Randolph	Sparta	Sept. 24-26
Randolph	Chester	Oct. 21-24
Richland	Olney	Sept. 16-20
Rock Island	Hillsdale	Sept. 17-19
Rock Island	Cordova	Sept. 16-18
Sangamon	Springfield	State fair
Schuyler	Rushville	Sept. 23-26
Shelby	Shelbyville	Sept. 23-26
Stark	Toulon	Sept. 22-27
Stephenson	Freeport	Sept. 9-12
Union	Jonesboro	Sept. 9-12
Vermillion	Catlin	Sept. 9-12
Vermillion	Danville	Sept. 2-
Vermillion	Hoopeston	Aug. 25-30
Wabash	Mt. Carmel	Sept. 24-27
Warren	Monmouth	Sept. 9-12
Wayne	Fairfield	Sept. 23-26
White	Carmi	Sept. 23-27
Whiteside	Sterling	Sept. 16-19
Whiteside	Morrison	Sept. 2- 5
Will	Joliet	Sept. 23-26
Williamson	Marion	Sept. 30-Oct. 3
Winnebago	Rockford	Sept. 15-19

MICHIGAN.

Armada	Armada	Oct. 1- 3
Barry	Hastings	Sept. 30-Oct. 3
Bay	Bay City	Sept. 23-26
Benzie	Benzonia	Sept. 24-25
Berrien	Niles	Sept. 23-26
Calhoun	Marshall	Sept. 24-27
Cass	Cassopolis	Oct. 2- 4
Clinton	St. Johns	Oct. 7-10
Clinton & Shia.	Ovid	Oct. 14-16
Eaton	Charlotte	Sept. 24-26
Genesee	Flint	Sept. 30-Oct. 3
Grand Traverse	Traverse City	Sept. 30-Oc. 3
Gratiot	Ithaca	Sept. 30-Oct. 3
Hillsdale	Hillsdale	Sept. 30-Oct. 3
Ingham	Mason	Sept. 24-26
Ionia	Ionia	Oct. 7-10
Kalamazoo	Kalamazoo	Sept. 23-26
Livingston	Howell	Sept. 24-26
Mason	Ludington	Sept. 23-25
Midland	Midland City	Oct. 8-10
Oakland	Pontiac	Sept. 30-Oct. 3
Sanilac	Lexington	Oct. 1- 3
Saginaw	East Saginaw	Sept. 22-26
Shiawassee	Owasso	Sept. 23-25
Tuscola	Vassar	Oct. 1- 3
VanBuren	Paw Paw	Sept. 30-Oct. 3
Washtenaw	Ann Arbor	Sept. 30-Oct. 3

WISCONSIN.

Baraboo	Baraboo	Oct. 1- 4
Burnet	Grantsburg	Sept. 24-
Columbia	Portage City	Sept. 16-19
Columbia	Columbus	Sept. 24-26
Columbia	Lodi	Sept. 23-25
Dodge	Juneau	Sept. 16-10
Fon du Lac	Ripon	Sept. 23-
Fon du Lac	Fon du Lac	Sept. 23-25
Green	Monroe	Sept. 17-21
Grant	Lancaster	Sept. 17-20
Grant	Boscobel	Sept. 24-26
German	Sheboygan	Sept. 23-26
Iowa	Mineral Point	Sept. 2- 9
Jefferson	Fort Atkinson	Sept. 16-19
Jefferson	Jefferson	Sept. 16-19
Jefferson	Watertown	Sept. 22-26
Kenosha	Kenosha	Sept. 16-21
Lafayette	Darlington	Sept. 9-11
Manitowoc	Clark's Mills	Sept. 16 21
Manitowoc	Saukville	Sept. 24-26
Portage	Amherst	Sept. 16-19
Racine	Burlington	Oct. 1-
Ripon	Ripon	Sept. 23-
Richland	Richland City	Sept. 16-18
Rock	Janesville	July 3- 6
Sheboygan	Sheboygan Falls	Sept. 16-18
Waukesha	Waukesha	Oct. 7-9
Waushara	Wautoma	Sept. 24-24
Wood	Grand Rapids	Sept. 2- 6
Walworth	Elkhorn	Sept. 23-26

IOWA.

Alamakee	Ludlow	Sept. 23-25
Black Hawk	Waterloo	Sept. 17-19
Boone	Ogden	Sept. 24-27
Bremer Co. Ind. A.	Waverly	Sept. 16-19
Buchanan	Independence	Sept. 16-19
Carroll	Mt. Carroll	Sept. 16-19
Cass	Atlantic	Sept. 9-12
Cedar	Tipton	Sept. 2- 5
Cerro Gordo	Mason City	Sept. 16-18
Chickasaw	New Hampton	Sept. 24-26
Clarke	Osceola	Sept. 9-11
Clayton	National	Sept. 30-Oct. 2
Crawford	Denison	Sept. 10-12
Dallas	Adel	Aug. 27-29
Delaware	Manchester	Sept. 16-19
Des Moines	Burlington	Sept. 23-26
Fayette	West Union	Sept. 9-11
Floyd	Charles City	Sept. 9-12
Franklin	Hampton	Sept. 9-11
Guthrie	Guthrie Centre	Sept. 10-12
Hardin	Eldora	Sept. 23-26
Hamilton	Webster City	Sept. 23-25
Henry	Mt. Pleasant	Oct. 1- 6
Howard	Cresco	Sept. 24-26
Humboldt	Humboldt	Sept. 17-19
Iowa	Marengo	Sept. 17-19
Jackson	Maquoketa	Sept. 9-12
Jefferson	Fairfield	Sept. 9-11
Johnson	Iowa City	Sept. 16-19
Keokuk	Sigourney	Sept. 9-12
Lee	Donnelson	Sept. 9-12
Louisa	Wapello	Sept. 9-11
Lucas	Charlton	Sept. 16-19
Madison	Winterset	Sept. 23-26
Mahaska	Oskaloosa	Aug. 26-29
Marion	Knoxville	Sept. 9-12
Marshall	Marshalltown	Sept. 10-12
Mitchell	Osage	Sept. 23-27
Monona	Onawa	Sept. 17-19
Monroe	Alsia	Sept. 17-19
Muscatine	Muscatine	Sept. 15-20

Osceola	Sibley	Sept. 17-18
Page	Clarinda	Sept. 9-13
Poweshiek	Malcolm	Sept. 9-11
Scott	Davenport	Sept. 1- 5
Stuart District	Stuart	Sept. 10-13
Taylor	Bedford	Sept. 24-27
Union	Mechanicsville	Sept. 9-12
Union	Mt. Joy	Sept. 9-12
Union	Strawberry Pt	Sept. 23-25
Union	Vilisca	Sept. 10-13
Union	Wt. Liberty	Sept. 9-12
VanBuren	Keosauqua	Sept. 25-26
Wapello	Ottumwa	Sept. 9-13
Warren	Indianola	Aug. 26-28
Washington	Washington	Sept. 9-12
Wayne	Corydon	Sept. 24-26
Winneshiek	Hesper	Sept. 23-25
Worth	Northwood	

KANSAS.

Allen	Iola	Sept. 15-18
Anderson	Garnett	Sept. 10-12
Burlingame	Burlingame	Oct. 1- 3
Butler	Augusta	Sept. 10-12
Brown	Hiawatha	Sept. 9-12
Cherokee	Columbus	Sept. 24-26
Cloud	Concordia	Sept. 24-27
Cowley	Winfield	Oct. 8-11
Crawford	Girard	Sept. 10-12
Dickinson	Abilene	Oct. 8-11
Doniphan	Troy	Sept. 23-26
Ellsworth	Ellsworth	Oct. 2- 4
Franklin	Ottawa	Oct. 1- 4
Greenwood	Eureka	Sept. 10-12
Harvey	Newton	Oct. 1- 3
Jackson	Holton	Sept. 2- 5
Jefferson	Oskaloosa	Sept. 30-Oct. 3
Jefferson	Valley Falls	Sept. 9-12
Kansas Valley	Lawrence	Sept. 2- 5
Labette	Oswego	Sept. 3- 5
Linn	La Cygne	Sept. 17-19
Linn A. & M.	Mound City	Oct. 1- 4
Lyon	Emporia	Sept. 16-19
Marion	Peabody	Oct. 1- 3
Marshall	Marysville	Sept. 30-Oct. 3
Montgomery	Independence	Sept. 25-27
Morris	Parkerville	Oct. 1- 3
Neosho Valley Dis	Neosho	Sept. 22-27
Osage	Burlingame	Sept. 17-19
Pawnee	Larned	Sept. 25-27
Riley	Manhattan	Sept. 23-26
Sedgwick	Wichita	Sept. 16-20
7th Judicial Dist	Chanute	Sept. 10-12
Shawnee	Topeka	Sept. 30-Oct. 3
Spring River	Baxter Springs	Oct. 1- 3
Washington	Washington	Sept. 10-12

NEBRASKA.

Cass	Plattsmouth	Sept. 17-18
Central	Hastings	Sept. 16-19
Colfax	Schuyler	Sept. 24-26
Dodge	Tremont	Sept. 23-27
Fremont	Fremont	Sept. 23-26
Hamilton	Aurora	Sept. 18-21
Jefferson	Fairbury	Sept. 17-19
Otoe	Syracuse	Sept. 8- 6
Richardson	Salem	Sept. 24-26

KENTUCKY.

Bourbon	Paris	Sept. 2- 7
Christian	Hopkinsville	Oct. 8-12
Eminence	Eminence	Aug. 12-16
Mercer	Harrodsburg	July 29-Aug. 1
Nelson	Bardstown	Sept. 2- 5
Simpson	Franklin	Sept. 11-14
Union	Germantown	Sept. 9-14
Warren	Bowling Green	Sept. 4- 8

MISSOURI.

Barton	Lamar	Oct. 7-10
Boone	Columbia	Sept. 9 13
Callaway	Fulton	Aug. 18 23
Cape Girardeau	Cape Girardeau	Oct. 14-18
Harrison	Bethany	Oct. 7- 9
Jefferson	Jefferson City	Oct. 1- 3
Miami	Miami	Aug. 26-29
Moberly	Moberly	Sept. 30-Oct. 4
Newton	Neosha	Sept. 25-27
St. Francois	Farmington	Sept. 9 13
St. Joseph	St. Joseph	Sept. 29-
St. Louis	St. Louis	Oct. 5- 9
Saline	Marshall	Sept. 2- 6
Shelby	Shelbyville	Sept. 15-21
Sturgeon	Sturgeon	Aug. 26-29
Sweet Springs	Brownsville	Aug. 19-23

MARYLAND.

Alleghany	Cumberland	Oct. 7-10
Baltimore	Cockeysville	Sept. 9-12
Dorchester	Cambridge	Sept. 30-Oct. 3
Harford	Bel Air	Oct. 7-11
Montgomery	Rockville	Sept. 4- 5
Kent	Chestertown	Sept. 16-18

The New York Horticultural Society.—Members should keep in mind the fact that the monthly meetings are held on the first Tuesday in each month. There are often exhibited at these meetings, choice specimens of plants, flowers, and fruits, and the doors are opened to the public, at 2 o'clock P. M. at each meeting. The locality—"Republican Hall," No 55 West 33rd St—is readily accessible by the elevated and other rail-roads.

The Jack Rabbit, or the Mule Rabbit, as it is called, from the great length of its ears, is very common in the Southwestern parts of the country. "A. B.," of Texas, asks how to make a trap to catch it; if any of our readers have successfully trapped it, we hope they will tell how. From the way in which it leaps across the country, we should think it difficult game to trap.

Sunflower-Seed Cake.—Professor Bergstrand, of the Royal Agricultural Academy, Sweden, has recently investigated the feeding value of oil-cake from the seeds of the Sunflower. It contains 13 to 16 per cent of fat, and 35 to 36 per cent of nitrogenous matter, which is very rich for an oil-cake. It has an agreeable taste and is relished by cattle. When fed to milch cows it has improved the quality and increased the quantity of milk. It is valuable also for fattening animals. Of the value of sunflower *seeds* for various uses, we have no doubt, and in view of this, farmers are frequently advised to cultivate them. It should be recollected that the *plant* of the sunflower is remarkably rich in potash, and would rob the soil of this most valuable constituent more rapidly than almost any other crop. If raised for the sake of the seeds, the stalks and all refuse should be gathered and burned, and the ashes returned to the land, otherwise it will impoverish the soil to a greater extent than the value of the seeds will compensate for.

A Fruit Dryer.—The "Zimmerman."—This fruit dryer has been sent for trial, but it is rather too early to put it to a practical test for a report the present month, as fruit proper for drying, corn, etc, are not quite in season with us. An examination of it, shows it to be constructed upon the correct principle, and almost exactly like a dryer which we constructed some 30 years ago, but not for fruit, and which we did not have patented. From former experience with a dryer closely resembling this, we feel almost as sure of the excellence of the "Zimmerman," as if we had put it to the test, which we propose to give it. The immense number now in use, show that it has exactly hit the popular want.

An Elevator in a Building.—"D. D. K.," Bethel, Ct. There is no difficulty in arranging an elevator. A well in which it works is to be provided, fitted with a slide at each corner made of a piece of half-round 2-inch wooden rod. These receive the thrust of grooved wheels fastened to the corners of the box, and which are forced against the rods by spiral springs. The box is made as may be convenient for shape and size, and the hoisting apparatus is an endless rope passing over a pair of pulleys and by which the box is drawn up and down. A balance counter weight should hang so as to rise and fall as the box goes down or up. This should work between slides similarly to the box to avoid noise.

Drinking Sour Milk.—The people in the rural districts of the Southern States, prefer sour milk to sweet, and will offer it to a traveller unless he expressly asks for sweet milk. This preference appears to be the out-growth of necessity, as in warm climates, sour milk is the rule, and not the exception. With better methods of keeping milk, which the modern inventions provide, it is probable that the preference for sweet milk will come with the ability to preserve it in that condition.

Archery.—That archery is becoming an "institution" in this country, is indicated by the appearance of a journal devoted to its interests. The "American Toxophilite," a monthly, comes to us from Kansas City, Mo., and is a bright and lively sheet filled with archery items. If any of our readers are puzzled over the title, we may save them some trouble by saying that Toxophilite is made up from the Greek words meaning *a bow*, and *to love, i.e.*, a lover of the bow.

"Raising Water up Hill."—An article with this title, appeared in our number for July last, on page 261. It contained a most stupid typographical error, which, late as it is, we desire to correct. Those who keep their numbers—which includes the great majority of readers, are requested to turn to the page named, and on the third line from the bottom of the left-hand column, cross out with a pencil, the word "water," and insert *winter*, so that it will read, "for use in the winter."

About Notices.—Strangers sometimes make mistakes. Not long ago, some one sent his "crinkum," with a note saying that he would advertise it if we would give it a favorable notice. It should be understood that sending an article, machine, implement, or whatever thing it may be, to the *American Agriculturist* for trial, does not put us under any obligation whatever to notice it. When one pays for his advertisement as agreed, there all *obligation* ceases. If one sends an article, whatever it may be, to this office, for trial, it is sent to one of the several farms or gardens intimately connected with the paper, where it receives a full and careful trial at the hands of practical men. If the implement, after being thus tested, appears to be one we think *our readers* should know more about, we are then very apt to say so; but we wish it understood that in accepting an article for trial, we enter into no obligation to give it a notice. The editorial pages are for the benefit of our readers; whatever is published there is with a view to its usefulness to them; if a notice that we may give there benefits another, that is his good fortune.

Basket Willows.—We have several times replied to inquiries, that there was no difficulty in growing willows, but that the trouble was to find a market for them. The willow trade is in the hands of a few importers, who, from the airs they put on, must be foreign counts or princes out of the royalty business just now. If they inform one that willows can't be grown in this country, it is a remarkable condescension, and some will not unbend sufficiently to say that. Our inquiries among these fellows taught us two things—how disagreeable people can be when they give what little mind they have to it, and that an American grower could not give—much less sell, his willows to their High Mightinesses. Seeing no chance of selling, we have not encouraged the growing. A few days ago, happening in at the Commission house of E. & O. Ward, No. 279 Washington St., whose card has been in our advertising columns these many years, we saw bundles of willows, and found that it was not an unusual thing for them to receive these among other *produce*—and that basket makers do not agree with the importers' view that willows can not be grown here, as they purchase them, knowing that they are American. The fact that willows can be disposed of through the Commission houses, will give encouragement to those who wish to cultivate them.

Vinegar Eels.—"A. B. K.," Taunton, Mass. The minute animals called vinegar eels, are entirely harmless, but if the idea of eating them is unpleasant, they may be destroyed by heating the vinegar. As it acts upon metallic vessels, it should be heated in earthenware or glass. Set a jar or jug containing the vinegar in a kettle with some chips or other material under it, to keep it from actual contact with the bottom of the kettle, nearly fill this with cold water, place upon the fire, and when the water boils, keep it at that temperature, until the vinegar is well heated through. If cooked eels are objected to, filter through flannel, or fine cotton cloth.

The Edelweiss.—This plant, figured and described last month on page 307, is one about which a great deal of unnecessary fuss is made in some parts of Europe. "C. B.," Bloomfield, N. J., sends us an item from the "*Deutsche Zeitung*," of Vienna. From this it appears, that the government of Bern, (Switzerland), has prohibited the sale of the Edelweiss, probably with a view to prevent its extermination. The object of the item is, to show that this prohibition is superfluous, as the plant has long been cultivated in the park of Prince Camille Rohan, in Bohemia, and that a nursery at Turman, sends out thousands of the plants, which are raised there.

New Books.

THE BOTANICAL TEXT BOOK. — Part I. Structural Botany. By Asa Gray. New York. Ivison, Blakeman, Taylor & Co. This is the sixth edition of a work which first appeared under the above title in 1842, and which was preceded by "The Elements of Botany," some six years earlier. Its successive editions have been welcomed by botanists, not only in this country, but in England, as the best exponent of the state of knowledge upon the topics of which it treated. The former edition, the fifth, was issued in 1857, and those familiar with the subject will not be surprised to learn that the present edition is entirely re-written. Twelve years ago, one volume sufficed for all that the average student need know of Structural Botany. At present, a series of four volumes is contemplated, of which this is the first. This is devoted to the structure of plants, the various shapes their parts assume, and the relations of their various organs to one another. It will be followed by a volume on Physiological Botany (vegetable Histology and Physiology), by Prof. Goodale. This will give the minute structure of plants, and the methods of growth. A third volume, by Prof. Farlow, will be devoted to the Flowerless Plants, Cryptogamic Botany—the Ferns, Mosses, Seaweeds, Fungi, etc. The series will be completed by a fourth volume on Systematic Botany—the natural orders of plants, their Classification, Distribution, Products, etc., by Prof. Gray. While the beginner can have no better guide in studying the structure of plants, as a preparation for their determination in systematic works, than the "First Lessons," by the same author, the advanced student will gladly welcome the present "Text Book." He will find here the same clearness of statement, the same happy method which clears up obscurities, the facility in presenting recondite matters "as clear as daylight," which characterized the former editions, and for which the author is unequalled among teachers of science. A critical review of the work is not called for in this place, and we need only say that the botanical student who would know the latest views of Organography and Morphology, and all that relates to the structure of flowering plants, will find them given here with a clearness and attractiveness not to be found elsewhere in the language. The intelligent general reader who would know something about plants and their structure, will find the subject presented in the most attractive manner, as the author is not one of those who, to appear profound, finds it necessary to be obscure. The Glossary of Botanical Terms is remarkably full, and the work is abundantly illustrated. Sent from this office at the publishers' price, $3.00.

THE PARKS AND GARDENS OF PARIS.—By W. Robinson, F.L.S. London: Macmillian & Co. Second edition

revised. When the first edition of this work appeared, several years ago, we called the attention of our readers to its instructive character. The present edition is greatly enlarged in matter and illustrations, the fruits of the author's subsequent visits to Paris and vicinity. The work begins with descriptions of the various public Parks, Gardens, Squares, and notable Avennes and Boulevards of the City, with accounts of some private gardens. Then come very full accounts of the fruit-growing localities around Paris, with descriptions of the various methods of training and culture. The market gardens from which the City is supplied have their operations given in detail, including those of the celebrated Asparagus gardens of Argenteuil, the wonderful Mushroom cultures in the caves under Paris, the unequalled salad gardens, etc. Besides, the flower markets and the methods by which they are supplied are treated in full. These various topics are illustrated by a profusion of engravings, some of them of exquisite beauty. In the illustration of a park, the *Parc Monceau*, for example, not only do we have choice views in the grounds, but separate groups, specimen plants, plans of planting, and other illustrations of its beauties, as well as "ugly needless structures," and methods of planting to be avoided. The chapter on "Ivy in Paris" shows how useful this plant is made in public and private decorations. Being educated as a gardener, the author is qualified above most writers on such matters to give accounts in full detail of the methods pursued in the noted fruit-growing localities, and in the celebrated market and flower gardens. This portion of the work is illustrated in the greatest detail, showing methods, implements, packages, or whatever may make the account complete. This work can not fail to be a most valuable guide book to every one with horticultural tastes who visits Paris and its vicinity. On the other hand, the "stay at home traveller" can get a better idea of the horticulture of the locality than from any other source, while the practical gardener and orchardist can not fail to find some hints to aid him in his own practice. Price, $7.50.

SUMMER AND ITS DISEASES.—By James A. Wilson, M. D. Philadelphia: Lindsay & Blakiston. The success of the flashy medical books and quack medicine treatises, is largely due to the general desire of people to know something about the common diseases, and as medical men have not supplied correct information in a popular form, the public have taken up with such books as they could find. We look upon the series of "American Health Primers," of which this work is a member, as a move in the right direction. It gives compact, clearly written treatises upon those medical and sanitary topics concerning which popular instruction is most needed, by men of eminence in the medical profession. Very properly, in this work on Summer Diseases, and in its companions the chief object is to show how to *prevent* the diseases, which is as important as to cure them, though that part of the subject is not omitted. In opening the present work by hazard, it was at the chapter on *Cholera Infantum*, where we read, "without the advice of a physician, never give it (the child), any *Spirits, Cordials, Carminatives, Soothing Syrups*, or *Sleeping Drops. Thousands of children die every year from these poisons.*" We can commend this work as eminently safe and useful. Price, 50c.

LONG LIFE, AND HOW TO REACH IT.—By Joseph G. Richardson, M. D. This is another one of the "American Health Primers," published by Lindsay & Blakiston, Phila. It consists of plain common-sense directions on the avoidance of diseases, and plain directions in the careful use of and preservation of the various faculties. It has no secret for reaching a long life, other than by the observance of those sanitary rules which should be heeded by every one, and which are here presented in an attractive manner. Price, 50c.

The West India Green Valley Grass.

During the past winter and spring, Messrs. R. F. Nix & Co., Hamburg, Iowa, advertised, under the above name, the seeds of a grass for which remarkable qualities were claimed. The label upon the packets of seed stated that "It produces from **12 to 14 tons of hay per acre**, and **3000 to 5000 bushels of roots** which are good for stock of all kinds, especially hogs. It will grow from one seed from One to Two Hundred Stalks." The advertisements went more into detail and made still more wonderful statements. A remarkable fact in relation to this seed was the sending of packages to the editors of agricultural papers. Not only this, we were favored with a photograph of a gentleman seated and reading at his ease, while the grass towered as far above his head as that was from the ground. As persons engaged in a fraudulent enterprise do not send specimens to editors for trial, we wrote Messrs. Nix & Co., inquiring as to the grass, its botanical name, and asked for a specimen of its flowers if it was to be had. They frankly replied that they did not know the scientific name of the grass, but would like to learn what it was, and as an indication of this wish, they sent from their stock, such specimens as they could find. While these specimens sent by Messrs. Nix & Co., gave us a fair ground for *guessing* what the plant was, we could not feel *sure*, and as in our correspondence, these gentlemen had shown all possible fairness, and were evidently acting in good faith, it would not be proper for us to act upon an uncertainty and say what the grass was from imperfect materials. Therefore, in fairness to them, we preferred to wait until seed had been sown and the plants had come into blossom, before we gave its name and character. This has been done, and the grass proves to be what we from the first suspected,

THE GUINEA GRASS (*Sorghum halapense*).

This grass was described in 1877, on page 99, and figured on page 100. It is therefore no novelty, as it has been in cultivation in the Southern States for years—for at least 40 years. One cultivator, N. B. Moore, near Augusta, Ga., has profitably cultivated 100 acres of this grass for many years; he manures generously and makes three or four cuttings during the season, but makes no mention of utilizing the roots—or properly the "root-stocks." How far this especially southern grass may be made useful in the Northern States, whether for hay, or for its "roots," is still an unsettled question, and we will thank those who in different parts of the country have made a trial of it under the name of "The West India Green Valley Grass," to give us their experience with it. We think it very doubtful if the "roots" will live in the ground through our northern winters, and would suggest to those who have the plant and wish to experiment further with it, that they take up a stock of these "roots" and keep them in sand or sandy soil over winter, as they will no doubt get returns sooner from planting bits of these next spring than from sowing the seed. This grass has not made much progress in the Southern States on account of the difficulty of eradicating it when once established; but to those who, like Mr. Moore, above quoted, make it a permanent crop, this is not a disadvantage. Its value in the Southern States, when properly managed, would seem to be well established. Now let us hear from others, not only as to its value as green forage and hay, but as to the feeding value as well as productiveness of the roots?

Horticultural Items.

For a mass of color in mid-summer, the Double Tiger Lily is very effective; the single flowers are irregular and ragged, but at a little distance this is not noticed and the effect of a clump is very brilliant and striking....We every now and then hear of the Blue Gum (*Eucalyptus*) in Britain. The "Farmer's Gazette" states that there are, at Killarney, Ireland, two trees, the larger of which is 50 ft. high, and 2 ft. 6 in. in circumference....*Paulowina imperialis* seems to be so uncertain in England, that its occasional flowering is recorded...."Irises are gradually coming to the front again," says a writer in the (London) "Garden." We are glad to learn that this is the case in England, and hope that Americans will act upon the hint and appreciate these flowers as they deserve....Sod fences are in use in some of the Western States; this reminds us that we have seen in Mexico, gardens surrounded by *adobe*—sun-dried mud fences, upon the tops of which were planted *Opuntias*, or cactuses of the "Prickly Pear" style, and perfectly boy proof .. The Japanese Iris, *Iris Kæmpferi*, has done remarkably well this year. It is one of the hardy plants that every one should have.... "The Garden" (London), gives in its issue for July 19, a colored plate of the various Hellebores, showing how beautiful these early flowering plants can be....According to a European writer, there are in the Imperial Library of China, 15,000 works on flowers, of which 500 are devoted to the Rose....Our common Pitcher Plant, Side-Saddle flower, Huntsman's Cup, or Whippoorwill's Shoe, as it is variously called (*Sarracenia purpurea*), is advertised in England as having "withstood the severity of the late winter." As this plant is found in the Hudson's Bay region, we do not in the least doubt it....The manner in which the English journals bewail the almost incessant rains that have fallen, show a most unfavorable outlook for gardeners as well as farmers....If one can have but a single early pear, let it be Manning's Elizabeth; when the tree gets age it bears immense crops of the most delicious fruit....Early American peaches, the Amsden and Alexander have made a favorable showing in England, notwithstanding the unfavorable weather ... A gardener in England proposes to make use of carrier pigeons to inform him of the wants of the family when 40 miles away....The second blooming of apple-trees is not unusual; the Early Harvest will often bear a few late flowers which are double, and thus give rise to the reports of roses upon apple-trees, and set wise heads at work to account for the phenomenon....Tuberous Begonias do not seem to have received the attention with us that they get abroad. They are most brilliant summer flowering plants ...A new budding machine has been introduced in England, especially commended for budding roses. The best budding "machine" that we know of is a boy brought up in a peach nursery; some of these will slip in 2,500 buds in a day and not think much of it... The "Gardener's Chronicle" spells it "Potatos"—does it by anology write "Tomatos?" This would be preferable to "Tomartuses," as sometimes heard in our markets....Peaches are being largely planted in the counties along the Hudson River, N. Y.; in a recent visit to Orange Co., the trees we saw promised a full crop. Extensive plantations have been made in Ulster Co. Let "the Peninsula" look out....Nitrate of soda is claimed to have produced wonderful cauliflowers in England this year ...Drying grasses and flowers to send to England is recommended to colonists in India, Africa, and Australia....Our native Sarracenias have been hybridized in Europe, and several interesting intermediate forms produced.

Items of Interest.

No Maryland State Fair this year....Michigan talks of putting her girls on a footing with her boys at the State Agricultural College....The "American Grocer" estimates that over 19,668,000 cans of tomatoes were put up last year....A single ant will lay millions of eggs. ....Nine thousand head of cattle are shipped from Florida to Cuba each month....Postage hereafter must be *entirely* prepaid....131,981 boxes of cheese were shipped from New York during the last week of July....There is a growing demand for American wind-mills abroad.... A snow-storm in Southern France is another of the strange things which are happening nowadays....A new pass over the Rocky Mountains has been discovered by Prof. Marsh....Illinois has 122,348 mules and asses this year....Delaware expects to send 3,700,000 baskets of peaches to market. ..A Minnesota hen is doing two day's work in one—32 eggs in 16 days....The latest for electricity—controlling a fractions horse by it while driving ...Feed the "pussley" to confined chickens. They eat it with a relish....Bread in London is three cents a pound, lower than for many years....Cod fishing along New Brunswick is excellent this season....The Connecticut Valley tobacco crop promises to be unusually large....Texas has considered her education and appropriates $600,000 for school work. Now she only needs good teachers....Harvard College graduated its largest class this year, over 200....The Canadian Government is engaging farmers to instruct the Indians in farming in the Northwest....Total value of postage stamps, stamped envelopes, and postal cards sold during the past year was $29,539,050, an increase of $971,866 over the previous year....The French Minister estimates that France will pay $100,000,000 for foreign grain, most of which sum will come to America....The United States uses 1,200,000 ounces of quinine as a febrifuge....Illinois gives $15,466 in premiums at her next State Fair....Grasshoppers are devastating the wheat fields of Southern Prussia....The "Golden Gate," a 17-foot schooner, has left Boston for a trip around the world. Two persons go with it....Potato bugs a short crop this year—too much Paris green. ....One hundred years ago there were only four newspapers in America....During the year ending June 30, 1879, 99,224 immigrants landed at New York....A farmer and ten of his cows were struck by lightning in England. ....Telephones are worked between Petersburg, Va., and Wilmington, Del., 226 miles....Real estate is rising in New York City; a good sign of better times... Missouri has a corn-cob pipe factory; pays a cent a piece for suitable cobs, and cannot supply the demand....Savannah shipped 8,650 barrels of rosin to Liverpool in a single cargo....Maine farmers get one-fourth more hay this year than usual....Five hundred barrels of lubricating oil at a time were shipped to Europe from Erie, Pa.... Twelve different sites are proposed for the next World's Fair in New York....Boston drinks 15,000 gallons of soda water per day....The English Hop-crop is reported as being almost a failure... Southern California is expecting an immense grape and orange crop... The direct losses to sheep-owners in the United States from ravages of dogs is over $1,000,000 annually....Nebraska is reported to have gained 72,662 in population in the last year. ....Illinois wheat will probably average twenty bushels per acre for 1879... Results of our last Fourth of July, so far as heard from, are 18 killed, 107 wounded.. .A quail was shot in Florida with a ruby in his throat.... 1,000,000 acres of the soil of India are devoted to the growth of the poppy, for the production of opium.... M. Duchartre calls attention to some experiments which go to show that melons raised from fresh seed bear a larger per cent of male flowers than plants grown from seeds kept for some time....Each day there are 1,800,000 gallons of petroleum brought to the surface of the earth. ....The Esterbrook Steel Pen Co. makes over 150 styles of pens....A ragged beggar recently dropped, accidentally, a package of $400....Ice weighs about the same as green wood—7,000 pounds per cord .. Now let farmers think of the comfort and value of an ice-house....A horse should have 1,200 square feet of breathing room in a stable, and the more the better....Sleepy Tom, a blind

horse, has made the fastest pacing time on record, 2.12¼ minutes... A poor Florida fisherman, while digging worms, found a pot containing $1,400 in gold coin.... Kentucky makes about 250,000 barrels of whiskey, consuming 3,000,000 bushels of corn and 500,000 of rye.... Some Jersey cows will give in one month their own weight of milk....A Texas wool-grower has a sheep with variegated black and white wool....There are over 724 millions acres of Government land surveyed and open to settlement, and 1,000 millions yet to be surveyed.... A cattle epidemic of a serious nature, we learn, has made its appearance at Lincoln, Nebraska. Fifty head per day die in that vicinity....Texas has 3,674,000 sheep....Salt your cattle regularly....A poppy has been found growing north of the 83d parallel, and is believed to be the most northern flowering plant thus far discovered....The annual production of bees-wax in the United States is 20 million pounds....Wool growing is becoming a leading industry in Western Texas....Thirty swarms of bees swarmed at once on a single tree in Boonesville, Ohio.... Always start a horse by the voice, and never by the whip. ... France, Belgium, and Cuba are the only countries producing a surplus of sugar. In the first two named, it is from the beet; in the last, cane-sugar....Eleven cheese factories were built in one county in Wisconsin last winter. All in operation....It requires not one-fourth as much power to move a load on water as it does by rail.... The City of New York disposes of 12,000 cattle per week. ....The Indiana State Board of Agriculture has created a woman's department in their State fair....Virginia has 12 cotton factories. She had none before the war.... Buckwheat should not be fed unground, as the sharp edges of the grain irritate the animal's stomach....Some factories use 2,000 pounds of vegetable ivory daily, making it into various small wares....The balance of trade is favor of the United States for the year ending June 30, 1879, was 267 millions of dollars....Thomas Taylor, Microscopist of the Department of Agriculture, is discharged by Commissioner Le Duc....The St. Louis Cotton Exchange offers $3,125 in premiums for this staple article at the coming St. Louis fair....Failure of crops, depression in trade, and foreign war, will make England thoughtful, if not sad....A Heliotrope 14 years old, and covering a space of 10×14 feet is reported....Michigan has 70,000 more acres of wheat this year than last....Many small farmers in France pay their rent from their poultry yards. ...At Worth, Iowa, a ram killed a dog which had badly torn a young lamb in the flock. Not a bone was unbroken in the dog's body, the revenge had been so severe....The acreage of Arkansas cotton crop is four per cent larger than last year....Italy has ordered 20,000 tons of coal from Philadelphia and Reading.

Nurserymen's Catalogues Acknowledged.

We do not usually acknowledge the autumn catalogues until October, but the practice of layering strawberries in pots, has become so general, and as the nursery catalogues, are, with but few exceptions, issued for the purpose of bringing these into early notice, we, for this reason, give the nursery catalogues *only*, at the present time. To avoid repetition, we may say that all the following who issue special strawberry and small-fruit catalogues, offer strawberries, pot-grown, or layed in pots, and of course have those started in the usual way.

NURSERYMEN.

JOHN S. COLLINS, Moorestown, Burlington Co., N. J. —Small fruits. Potted strawberries.

ELLWANGER & BARRY, Rochester, N. Y. — Special strawberry list. Useful directions for culture.

W. L. FERRIS, JR., Dutchess Nurseries, Poughkeepsie, N. Y.—Strawberry catalogue.

A. HANCE & SON, Rumson Nurseries, Red Bank, N. J. —Strawberries.

PETER HENDERSON & Co., No. 35 Cortland St., New York. Strawberries, with a handsome plate, and pot-grown grape-vines.

J. T. LOVETT, Monmouth Nursery, Little Silver, N. J. —Strawberry catalogue with useful cultural directions.

WILLIAM H. MOON, Glenwood Nurseries, Morrisville, Pa.—Strawberry catalogue with notes on cultivation.

JOHN PERKINS, Moorestown, Burlington Co., N. J.— General list of fruit and ornamental trees.

E. P. ROE, Cornwall-on-the-Hudson, Orange Co., N. Y. —A full and instructive catalogue on small fruits.

SAMUEL H. RUMPH, Willow Lake Nursery, Marshallville, *Ga.*—General catalogue of fruit trees and small fruits; very full in peaches.

B. F. TRANSOV & Co., Humboldt, Tenn.—Fruit and ornamental trees, flowering shrubs, etc.

New Fall or Winter Wheats,

HEADS SIX INCHES LONG.

Champlain and Defiance.

These two varieties which have succeeded so wonderfully as *Spring Wheats*, have been shown by experiments to be equally valuable as *Winter* varieties. We are confident that they will soon supercede all the varieties now sown. Send for Wheat circular giving full description and prices. Mailed free to all applicants. B. K. BLISS & SON'S,
P. O. Box, 4,129. 34 Barclay St., New York.

TREES A large assortment of **Fruit, Shade, Ornamental Trees** and **Shrubs, Roses, Greenhouse Plants,** etc.; **Gregg Raspberry, Snyder Blackberry, Apple Seedlings.** New Fall Catalogue free. Established 1852
BAIRD & TUTTLE, Agents, Bloomington Nursery, Illinois.

CHERRY TREES, CRAB TREES, CURRANTS, HEDGE PLANTS, and other NURSERY STOCK. For sale at the **MORRIS NURSERIES,** GEORGE ACHELIS, Proprietor, West Chester, Pa.

READ THIS.—Extraordinary Success in raising potatoes is realized by growing the **"Mammoth Pearl."** Crops doubled wherever introduced. **Far** ahead of **all** other varieties. Growers of potatoes, send for full prices of this and other very good varieties to J. A. EVERITT, Box 229, Watsontown, Northumberland Co., Pa.

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Peruvian Guano,

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It contains *all* the elements of **Plant-food** in the most
CONCENTRATED, BEST and CHEAPEST
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SOIL, CROP and CLIMATE.
Price Lists and descriptive Pamphlets as to its qualities: Brands under which it is sold, and brief directions for its use, will be sent gratis on application to
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WOOLSON & Co., Passaic, N. J., who make a specialty of Hardy Flowers, would call attention to the fact that the autumn is the best season for transplanting the majority of these plants. Among a large number of specially desirable kinds they offer

The Japan Irises, *Iris Kæmpferi.* These are quite different from the common Irises, and present a large and attractive variety. Each 25c. Per dozen, $2.50.

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Fig. 2.

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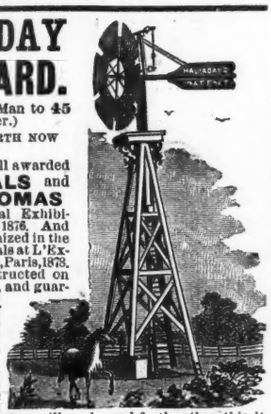

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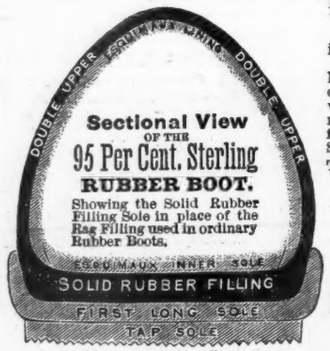

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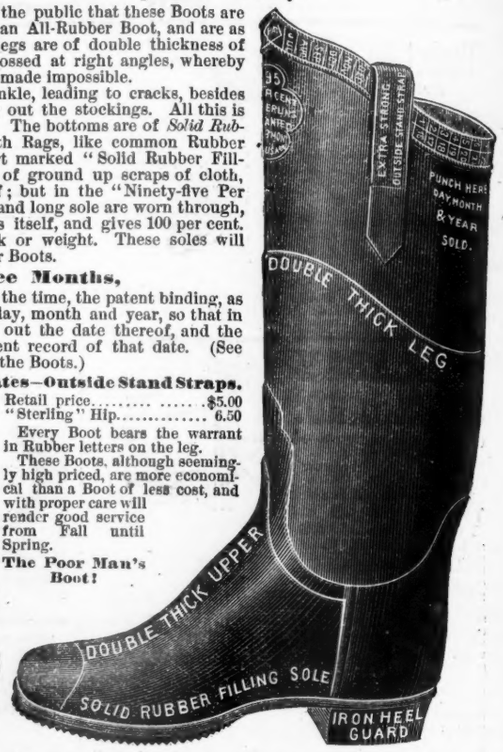
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